

# SR 92-82 Interchange Improvement Project

SAN MATEO (SM) COUNTY, CALIFORNIA  
DISTRICT 4 – SM – 92-82(Post Miles 11.0/10.3, 11.5 /10.7)  
Expenditure Authorization 23552/Project ID 0412000496

## Initial Study with Negative Declaration



Prepared by the  
State of California Department of Transportation



May 2014



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## NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

### ***Project Description***

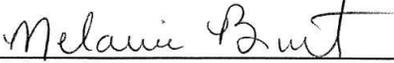
The California Department of Transportation (Caltrans) proposes to modify the SR 92-82 Interchange from Post Miles (PM) 11.0 to 11.5 and 10.3 to 10.7, in the City of San Mateo, in San Mateo County.

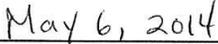
### ***Determination***

Caltrans has prepared an Initial Study (IS) for this project, and following public review, has determined from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on the following resources: Air Quality, Community Character and Cohesion, Environmental Justice, Existing and Future Land Use, Farmlands and Timberlands, Mineral Resources, Parks and Recreation, Public Services, Right of Way and Wild and Scenic Resources. The project is consistent with state, regional and local plans and programs.

In addition, the proposed project would have less than significant effects to Aesthetics/Visual, Transportation/Traffic, Geology and Soils, and Noise resources.

  
\_\_\_\_\_  
Melanie Brent  
Deputy District Director  
District 4  
California Department of Transportation

  
\_\_\_\_\_  
Date

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## SUMMARY

The project proposes to modify the existing interchange State Route (SR) 92 and SR 82 (also known as El Camino Real [ECR]) on its existing alignment to a partial cloverleaf interchange. This would entail widening the existing ramps and reconfiguring the existing interchange from a full cloverleaf to a partial cloverleaf. The project also proposes to widen the sidewalk on each side of SR 82 and provide Class II bicycle lanes on SR 82 between the ramp intersections. The City of San Mateo, the San Mateo County Transportation Authority (SMCTA) are project sponsors and Caltrans is the lead agency under the California Environmental Quality Act (CEQA).

## Purpose and Need

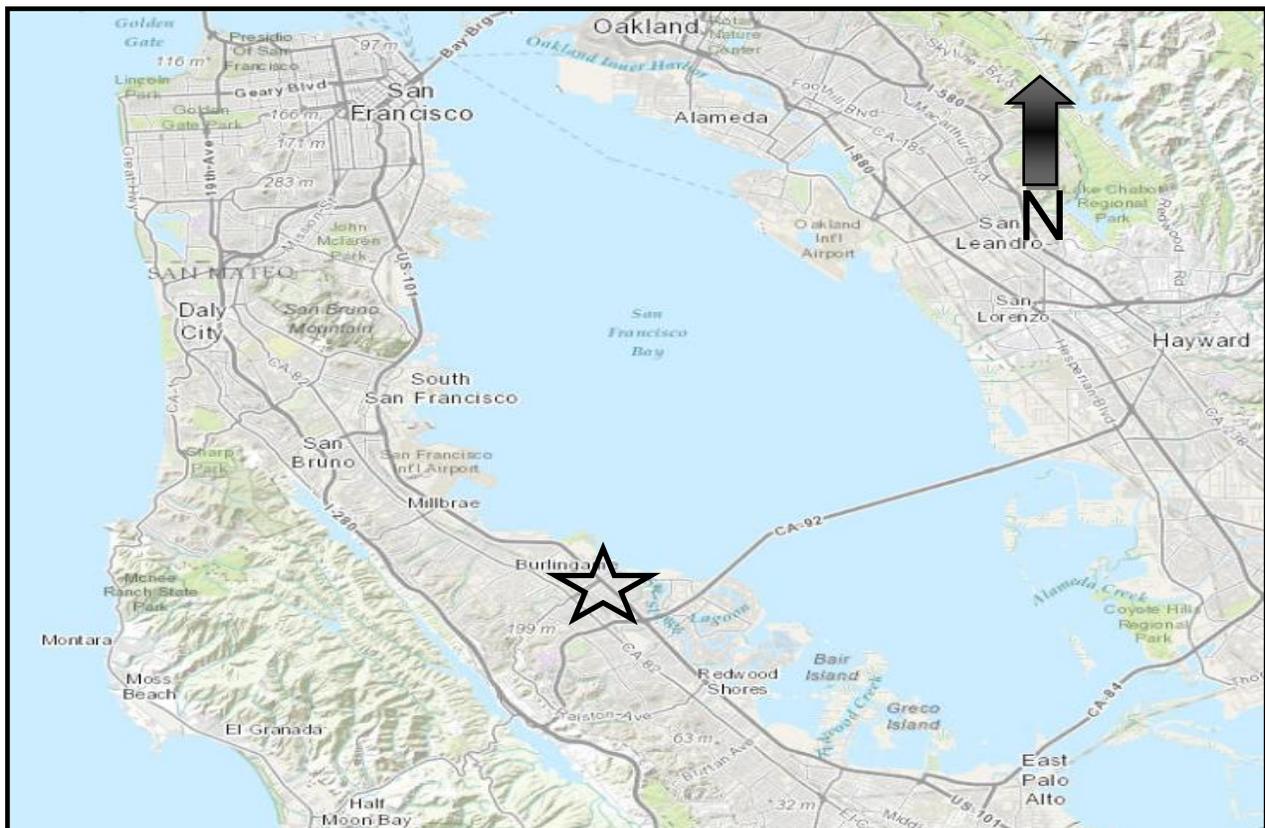
The current configuration of the SR 92 and SR 82 interchange is resulting in operational deficiencies which is causing queuing and weaving on SR 92. The purpose of this project is to increase performance at the on and off ramps and to address the secondary operation deficiencies on the SR 92 mainline.

## Project Information

### Location

The proposed project is located where SR 92 and SR 82 intersect, in the City and County of San Mateo, in the San Francisco Bay Area in California. The project limits are from post mile (PM) 11.0 to PM 11.5 on SR 92 and PM 10.3 at intersection of ECR/W. 20th Avenue to PM 10.7 at intersection of ECR/17th Avenue & Bovet Road. The project, located in the San Francisco Bay Area, is depicted in Figure 1, below:

**Figure 1. Project Vicinity**

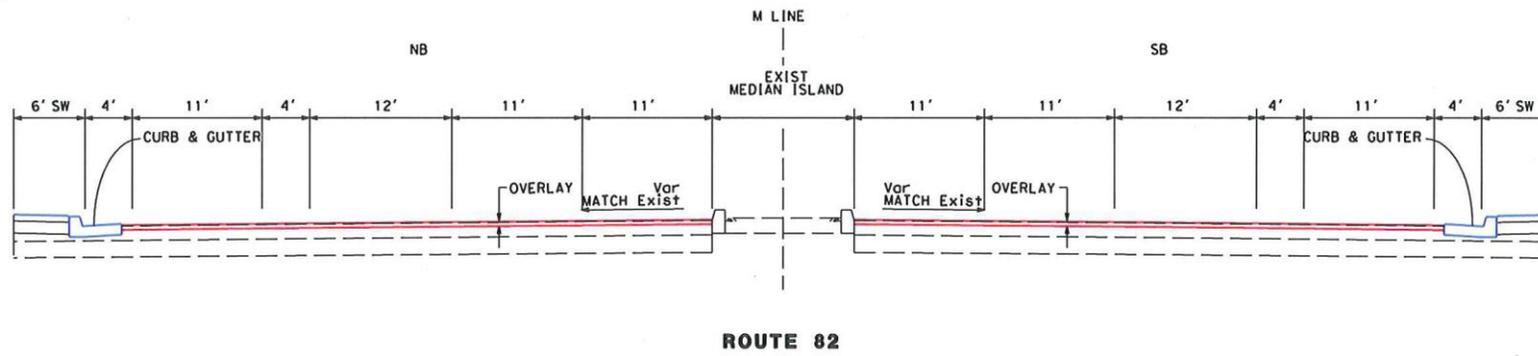


**Figure 2. Project Limits**



The project location is shown above in Figure 2.

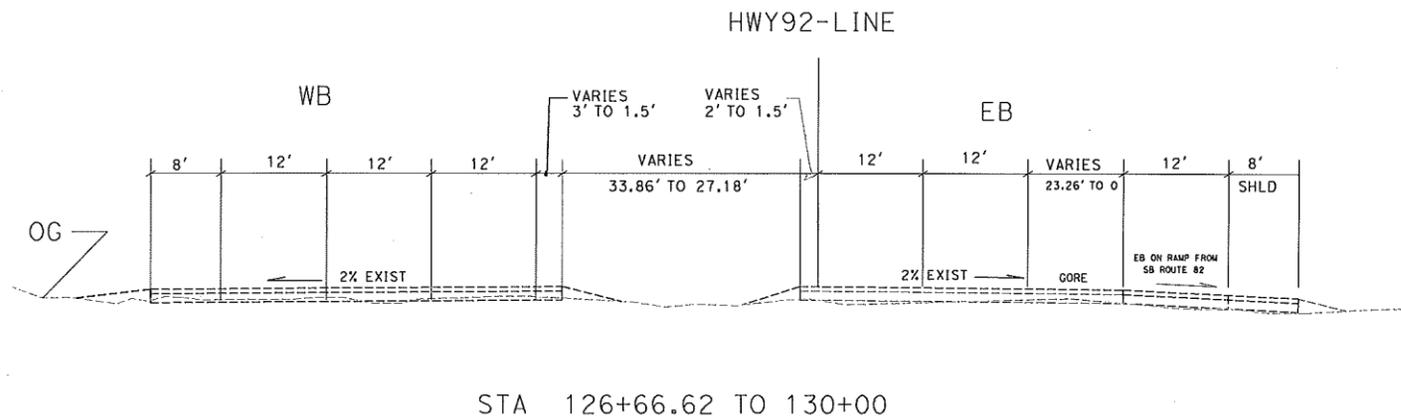
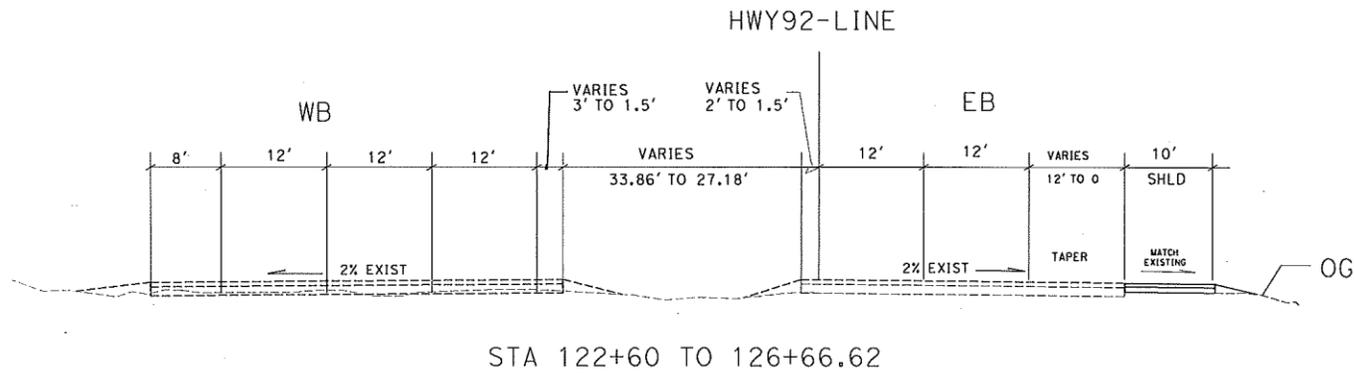
Figure 3. Existing Cross Section of SR 82



**TYPICAL CROSS SECTIONS**

Figure 4. Existing Cross Section of SR 92

# TYPICAL CROSS SECTIONS



# HIGHWAY 92

Figure 5. Conceptual Design (no scale)



STATE ROUTE 92/82  
INTERCHANGE IMPROVEMENT  
SAN MATEO CA  
(IMPROVE TRAFFIC OPERATIONS AND SAFETY)  
BEFORE AND AFTER AERIALS



# CHAPTER 1- Proposed Project

## Introduction

Caltrans proposes to improve and reconstruct the SR 92/82 Interchange on its existing alignment to a partial cloverleaf interchange. Project location limits are PM 11.0 to PM 11.5 for SR 92, and PM 10.3 (20th Ave.) to PM 10.7 (17th Ave./Bovet Rd.) for SR 82. The Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA).

The project proposes to eliminate short weaving distances and provide more storage capacity for the interchange on and off-ramps to improve traffic operations and increase performance at the SR 92/82 Interchange. The project is a partnership effort between City of San Mateo, SMCTA, and Caltrans. The project sponsor is the City of San Mateo.

The existing facility was constructed in 1965 and is a full cloverleaf interchange that provides complete access to vehicles in all directions. All ramps are currently single-lane entry or exit. Off-ramps are yield controlled at SR 82, and on-ramps are all free movements.

SR 92 runs east-west from the city of Hayward, crosses the bay on the San Mateo-Hayward Bridge, through the City of San Mateo, turns into a conventional highway at I- 280 interchange until it intersects SR 1 on the coast. SR 82, which primarily runs parallel to US 101, is a four- to six-lane arterial that runs north-south along the peninsula between the Cities of San Jose and San Francisco.

Within the project area, SR 92 is a four-lane freeway, with 12-foot lanes, 1.5 to 3-foot inside shoulders and 8-foot outside shoulders. SR 82 is a six-lane road with painted and raised medians and a posted speed limit of 35 miles per hour (mph). Lane widths range from 11 to 12-feet with 8-foot outside shoulders and no inside shoulders.

The project also proposes to widen the sidewalk on each side of SR 82 and provide Class II bicycle lanes on SR 82 between the ramp intersections. Currently there are no dedicated bicycle lanes at the SR 92/82 Interchange.

This project is included in the *Transportation 2040 Plan for the San Francisco Bay Area*, which is the Metropolitan Transportation Commission's (MTC) current Regional Transportation Plan (RTP), Ref. No. 21613.

There is currently \$19,300,000 programmed for this project.

Construction is expected to commence in 2016 and be completed by 2018.

## Purpose and Need

The purpose and need of the project is to reduce existing traffic congestion, bottlenecks, weaving and queue spillback at the interchange on and off ramps. According to the Traffic Operations Report for the State Route 92/82 Interchange<sup>1</sup>, traffic congestion is causing 451 vehicle hours of delay in the AM peak hour and 554 vehicle hours of delay in the PM peak hour within the study limits. The Level of Service (LOS) of SR 92 in the eastbound and westbound directions for the AM (8:00-9:00 AM) and PM (5:00-6:00 PM) peak hours range from LOS D to F. LOS D representing noticeably limited freedom to maneuver in the traffic stream. LOS E represents virtually no usable gaps within the traffic stream, leaving little room to maneuver. F represents a breakdown in flow. LOS should be in the A-C range for best traffic operations. See Table 6 for Freeway Level of Service definitions.

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<sup>1</sup> Traffic Operations Report for the State Route 92 (SR 92)/El Camino Real (SR 82) Interchanges PA/ED. Prepared for San Mateo County Transportation Authority, City of San Mateo and Caltrans. Fehr & Peers, October 2013.  
Pg. 35, Table 2-13, pg 27, Table 2-7 and pg. 28, Table 2-8.

## CHAPTER 2 - Project Alternatives

### Alternatives

Nine alternatives were studied for this project including the No-Build alternative and Partial Cloverleaf Interchange alternative. Eight of the alternatives were rejected because they did not meet the purpose and need or were not within the scope of the project. These are discussed further under the Alternatives Considered but Withdrawn section later in this chapter. The No-Build Alternative analyzed project conditions if the proposed improvements were not to be constructed. The No-Build Alternative serves as the baseline to which the Build Alternative can be compared.

Following the screening results, refinements to technical analysis indicated that the Partial Cloverleaf was the viable Build Alternative identified for further analysis. This alternative best addressed the need and purpose of the project.

Caltrans Project Development Team (PDT) has selected the Build Alternative.

### Build Alternative- Partial Cloverleaf

The partial cloverleaf design would eliminate the short weaving distances on SR 92 between the loop on and off-ramps to and from SR 82. In summary, the elements of the partial cloverleaf are:

1. Eliminate the existing westbound SR 92 loop off-ramp to SR 82 in the northwest quadrant.
2. Eliminate the existing eastbound SR 92 loop off-ramp to SR 82 in the southeast quadrant.
3. Realign and widen the existing SR 92 westbound diagonal off-ramp to SR 82 in the northeast quadrant of the interchange. The ramp would be widened to two-lanes. At the ramp terminal, it would be widened to provide two left turn lanes and two right turn lanes. All lanes would be 12-foot wide with 4-foot left shoulder and right shoulder between 4-foot and 8-foot. A new traffic signal would be installed at the ramp terminal.
4. Realign and widen the existing SR 92 eastbound diagonal off-ramp to SR 82 in the southwest quadrant of the interchange. The ramp would be widened to two-lanes. At the ramp terminal, it would be widened to provide two left turn lanes and two right turn lanes. All lanes would be 12-foot wide with left shoulder varying between 4-foot and 6.5-foot and right shoulder varying between 4-foot and 8-foot. A new traffic signal would be installed at the ramp terminal.
5. Realign and widen the existing SR 92 westbound diagonal on-ramp from southbound SR 82 in the northwest quadrant of the interchange. The ramp

- would be widened to provide 12- foot HOV and SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
6. Realign and widen the existing SR 92 eastbound diagonal on-ramp from northbound SR 82 in the southeast quadrant of the interchange. The ramp would be widened to provide 12- foot HOV and SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
  7. Realign and widen the existing SR 92 eastbound loop on-ramp from southbound SR 82 in the southwest quadrant of the interchange. The ramp would be widened to provide two 12- foot SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
  8. Realign and widen the existing SR 92 westbound loop on-ramp from northbound SR 82 in the northeast quadrant of the interchange. The ramp would be widened to provide a 12- foot HOV lane and a 12-foot SOV lane with 4-foot left shoulder and 8-foot right shoulder.
  9. The southwest quadrant diagonal off-ramp would have a soundwall of approximately 536 feet. Retaining walls will be added to diagonal ramps at the northeast (370 feet), southwest (650 feet) and southeast (300 feet) quadrants to facilitate the widening.
  10. Concrete barriers would be installed between the ramps in both the southwest and northeast quadrants.
  11. Widen SR 82 in the northbound and southbound direction to add 11-foot right turn lane, 8-foot sidewalk and pavement markings per Class II bike lane standards within the bounds of the newly signalized intersections. In addition, Caltrans will consider the following design conceptual elements and will explore them further in the design phase:
    - A minimum 8 foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps.
    - A Class II bike lane on SR 82 between the ramps of the intersection that is 5-feet in width in each direction
  12. Outside shoulder widening on eastbound and westbound SR 92.

Discussed below are the proposed design features in more detail.

### Ramp Widening

The SR 92 diagonal eastbound and westbound off-ramps will still be one lane off-ramps but will transition to 4 lanes before the junction with SR 82 to provide adequate storage lanes for turn movements into SR 82. The diagonal on-ramp entrances will be widened to 2 lanes to increase storage capacity and will taper down to a single lane before entering SR 92. The loop on-ramps will be widened (specific geometrics to be determined during the design phase) to better facilitate trucks, but will remain single lane ramps.

### Noise Barriers and Retaining Walls

Noise studies and cost estimates completed for the project conclude that it is feasible to have one, approximately 530-foot (ft), soundwall installed at the southwest quadrant diagonal on-ramp. Noise barriers will not be needed at other locations assessed for noise impacts as the noise abatement criteria levels were not exceeded. Retaining walls will be needed at diagonal ramps at the northeast, southwest and southeast quadrants to facilitate the widening, as the existing terrain is on a slope.

### Concrete Barriers and Metal Beam Guard Railing

The ramps at the northeast and southwest quadrants would have concrete barriers and metal beam guardrails serving as buffers and safety features.

### Drainage Systems

The drainage systems will be addressed in the design phase of the project.

### High Occupancy Vehicle (HOV) (Bus and Carpool) Lanes

An HOV bypass lane will be provided for all on ramps with the exception of the eastbound loop on-ramp where room is available for only 2 mixed flow lanes.

### Pedestrian Features

A minimum 8-foot wide sidewalk is planned on both sides of SR 82 from the outer edges of the on- and off-ramps connecting to the existing network.

### Bicycle Facility Features

A Class II bike lane is planned on SR 82 between the ramps of the intersection that is 5-feet in width in each direction. The lane is adjacent to the sidewalk the duration of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles onto the on-ramps.

### Ramp Metering

The SR 92 freeway corridor is included in the Statewide Ramp Metering Development Plan (RMDP). An Exception to the Ramp Metering Policy Fact Sheet will be drafted as the HOV lane requirements for the eastbound loop on-ramp cannot be met.

### California Highway Patrol (CHP) Enforcement Areas

There are CHP Enforcement areas proposed for the build alternative on the two diagonal on-ramps. However, at the loop on-ramps the CHP Enforcement Areas and the Maintenance Vehicle Pullouts (MVPs) have been combined due to space constraints.

### Highway Planting

The estimated area of replacement highway planting is 9.0 acres. The total disturbed soil area (DSA) for the highway widening work was estimated at 12.0 acres, as shown in the project's Storm Water Data Report (May 2012). The replacement planting/irrigation work is planned at the project interchange location, including outside of the diagonal ramps, and within current Caltrans Right of Way areas. The general replacement highway planting design concept is "relate to California natural and cultural history". The design objective for the landscape ground plan is to be somewhat uniform and low, and would be made up of grasses and shrubs. Some ground plan variation will be achieved by the use of rock and bark mulches, low growing shrubs, and various plant species having unique color, form, and texture. Larger shrubs and trees will be utilized along the outside of the diagonal ramps, to screen views of traffic and the sound wall from neighboring residences. The existing remaining planting within the project limits, will be selectively preserved to respect an overall corridor planting theme, maintain visual character, and reduce maintenance. Trees and shrubs that are problematic, dead, or showing a decline in health will be removed. *Quercus Oak trees* are the dominant remnant tree species occurring along the SR 92 corridor, and within the project limits. New trees and shrubs species, noted for their foliage color, texture and drought tolerance, will be incorporated to enhance the dark green foliage and character of the oak trees. Highway replanting will be designed further in a later phase, becoming an independent project in the future.

### Erosion Control

Temporary and permanent erosion control measures will be installed to protect disturbed soils, at various phases of highway planting construction. Erosion control will provide: highway facility protection, roadside slope stabilization, source control of any soil silts, reduction/management of any concentrated storm water flow conditions, and cover for disturbed soil areas from construction operations/staging impacts. Additionally, erosion control is necessary also to help meet water quality discharge requirements. Permanent erosion control will be achieved by installation of planting (trees, shrubs, groundcovers, and grasses) and other landscape materials (compost, mulches, and netting). Temporary erosion control will be

achieved through placement of straw fiber rolls and organic/inorganic materials to cover soil areas and drain inlets. Compost will be used extensively to improve soil fertility, storm water infiltration, plants, rooting depth and water holding capacity, as well as reduce soil erosion and improve water quality. This project will incorporate the use of temporary construction site Best Management Practices (BMPs) and permanent erosion control BMPs. The project does not require hydromodification mitigation since it is located within the exempt area (i.e., hardened channel) per San Mateo County's C.3 Stormwater Technical Guidance (2012). The project will not cause water discharge into navigable waters and will not be filling or dredging wetlands. Thus, the project is not anticipated to require Clean Water Act (CWA) Section 401 Certification from the Regional Water Quality Control Board (RWQCB) and there is no need for a CWA Section 404 permit from U.S. Army Corps of Engineers (USACE).

#### Nonmotorized and Pedestrian Features, etc.

The design shall apply the Caltrans Complete Streets Deputy Directory Policy on Complete Streets-Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit riders, and motorists appropriate to the function and context of the facility.

#### Construction details

A Traffic Management Plan (TMP) answers questions regarding potential lane/ramp closures, closure periods, length of construction, and coordination with Emergency Service Providers. A TMP typically includes information regarding project impacts and transportation management measures. Project impacts include lane closures and modified access and transit, pedestrian and bicycle impacts. Transportation management measures include the following components: public information, motorist information, incident management, construction strategies and demand management strategies. The Transportation Management Plan cost for this project has been estimated to be \$450,000.

The TMP for this project will not likely have lane or ramp closures during the day due to traffic conditions. However, if a lane closure is necessary, the closure hours will be determined during the plans, specification and estimates (PS&E) phase. Full ramp closures are possible with detours in place (standard in construction). On SRs 82 and 92 lane closures are permitted but at least 1 through lane will always be provided to the public. The length of time for the closures will be determined during the PS&E phase of the project for SRs 92, 82 and the ramps.

Typically, Caltrans will coordinate with and notify the local California Highway Patrol (CHP) office and the local Fire Department weekly of upcoming lane closures. CHP will also be on site at nights if Caltrans is doing the construction inspection. Caltrans

will also coordinate with the City of San Mateo on the weekly schedule of upcoming closures.

### **No Build Alternative**

The No-Build Alternative analyzes project conditions if the proposed improvements were not to be constructed. The queuing and weaving at the SR 82/92 Interchange will continue to worsen if the current interchange is not modified.

### **Alternatives Discussed But Eliminated From Further Analysis:**

Since the project's inception, the Build Alternative has consistently focused on the modification of the SR 92/82 Interchange, in order to satisfy the purpose and need of the project. Within that framework, numerous design variations were considered but rejected because these variations do not meet the project purpose and need.

The following design variations were rejected as it was determined that they were not feasible because of design constraints:

#### *1. Diamond Interchange:*

This design variant would eliminate all the loop ramps. Two new traffic signals would be installed at the off-ramp intersections with SR 82. The SR 92 diagonal eastbound and westbound off-ramps would still be one lane off ramps but would transition to 4 lanes before the junction with El Camino Real to provide adequate storage lanes for turns onto El Camino Real. The diamond on-ramps at the El Camino Real Interchange (I/C) would be two-lane entrance ramps transitioning to a single lane before reaching SR 92. In addition, triple left turns from southbound (SB) SR 82 (EB) SR 92 at the new intersection would be needed. Level of service would still be F and the existing width of SR 82 is not wide enough to support the additional lanes without reconstruction of the SR 92 over crossing. The Diamond Interchange variation was found to be operationally not feasible. Generally, the proposed diamond configuration would not support the projected growth in volumes and would result in poor level of service for the ramps.

#### *2. Roundabout Diamond Interchange (RDI):*

A roundabout diamond interchange has a similar ramp configuration to a spread diamond interchange (SDI). A SDI configuration is the most common type where a major facility intersects a minor highway. The design allows free flow operation on the major highway but creates at grade intersections on the minor highway with the ramps. In contrast the RDI is designed with two on-ramps and two-off-ramps; however, the ramp terminal intersections are controlled with roundabouts instead of stop signs or traffic signals. Roundabouts at the SR

92/SR 82 would need to be two or three lane to accommodate the high traffic volumes on SR 82. To accommodate pedestrians at multilane roundabouts, pedestrian activated signalization is needed at the crosswalks, thus reducing the operational benefits of the roundabout. Additionally, a roundabout would not be able to accommodate the high volume of left-turning traffic from SB SR 82 to EB SR 92.

3. *Single Point Urban Interchange (SPUI):*

A single point urban interchange (SPUI) is similar to a diamond interchange; however, there is a single ramp terminal intersection instead of two. SPUIs typically show the most benefit at locations with closely spaced intersections, since they eliminate one intersection and provide better spacing between remaining intersections. In the case of the SR 92/SR 82 Interchange, there is already sufficient spacing between ramp terminal intersections and adjacent downstream intersections. A SPUI would also require complete reconstruction of the existing SR 92 structure over SR 82, adding significant cost over the other variations considered.

4. *The Diverging Diamond Interchange (DDI):*

The diverging diamond interchange (DDI) is a type of diamond interchange that uses crossover movements at the ramp terminal intersections to increase capacity. The design allows for fewer lanes on the local street compared to a regular diamond interchange because left-turn storage lanes are not needed. The DDI is more efficient because all turns onto on-ramps are uncontrolled and the signals at the ramp terminal intersections can be operated with two signal phases instead of three. However, a DDI does not accommodate high volumes of through traffic on the local street since opposing directions of traffic have conflicting green phases; signal progression through the corridor is therefore sacrificed. This configuration would not be appropriate at this location due to the high volume of through traffic on SR 82.

5. *L-8 Configuration Interchange:*

This design variant would eliminate both the diagonal and loop ramps in the northeast (NE) quadrant and the loop off-ramp in the southeast (SE) quadrant. All the remaining ramps would be widened to at least two lanes at the intersection with SR 82, with the exception of the westbound SR 92 loop off-ramp, which would be four lanes wide. This option was not included in the TOR study because design constraints eliminated this variation from further consideration. The widening of the westbound loop off-ramp would provide a tight radius through which the motorist would have to decelerate from freeway speeds to a design speed of 25 mph. In addition, the loop-off ramp will likely not have enough storage. It is likely that more accidents would occur due to congestion and minimal sight distances.

## **CHAPTER 3 - Affected Environment, Environmental Consequences and Avoidance, Minimization, and/or Mitigation Measures**

As a part of the scoping and environmental analysis conducted for the proposed project, the following environmental issues were considered but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

- *Air Quality* – The proposed project would not conflict with or obstruct implementation of any applicable air quality plan, but rather conforms to both the 2035 Regional Transportation Plan (RTP) and the 2011 Transportation Improvement Program (TIP). The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and would not result in a cumulatively considerable net increase of any criteria pollutant under applicable federal or state ambient air quality standards. The project would not expose sensitive receptors to substantial pollutant concentrations.

The project does not require a regional emissions analysis and is not considered capacity increasing, but rather an operational improvement. The Construction Impacts section includes a discussion of avoidance and minimization measures related to temporary air quality effects during construction.

- *Community Character and Cohesion* - The proposed project will not alter the character or cohesiveness of existing neighborhoods or communities.
- *Consistency with State, Regional and Local Plans and Programs* - The proposed project, under its purpose and need, is consistent with state, regional and local plans and programs, as well as transportation plans and programs. The 2035 Transportation Plan for the San Francisco Bay Area, adopted by the Metropolitan Transportation Commission in 2009, identified the proposed project as Project ID 230424. The proposed project is consistent with the City of San Mateo “Vision 2030” General Plan. Circulation elements will be discussed in the Traffic and Transportation/Pedestrian and Bicycle Facilities section.
- *Environmental Justice* – There would be no impacts concentrated in any area of minority or low-income residents. The proposed project would not cause adverse effects on any minority or low-income populations.
- *Existing and Future Land Use*- The proposed project would not affect existing or future land uses. No acquisition of residential or commercial structures is anticipated, and the project would not alter community interaction patterns.

- *Farmlands and Timberlands* – Historically, the proposed project area has been designated for highway use. There are no farmlands or timberlands within the project vicinity.
- *Growth* – The proposed project is a reconfiguration to an existing interchange, not a modification to highway capacity operation or accessibility increasing or influencing growth.
- *Mineral Resources*- There are no known mining resources within the proposed project vicinity.
- *Parks and Recreation* – No parks or recreational facilities are affected by the project.
- *Population and Housing*- The proposed project would not displace any existing housing or people with pre, during, or post construction activities.
- *Public Services*- The proposed project would not result in any adverse impacts to fire protection, police protection, schools, parks, or other public facilities. Caltrans would notify the local CHP office and the Fire Department weekly of upcoming closures. CHP would also be on site at night if Caltrans is doing the construction inspection. The City traffic engineering or transportation planning department would also be expected to do the same.
- *Right-of-Way*- The proposed project would not require any additional right-of-way. All work would be within existing Caltrans right-of-way.
- *Wild and Scenic rivers*- The proposed project would not impact any wild or scenic rivers.

## **UTILITIES AND EMERGENCY SERVICES**

### **Affected Environment**

The affected environment is the SR 82 and SR 92 highway I/C including on and off-ramps and loops.

### **Environmental Consequences**

#### *Utility and Other Owner Involvement*

Underground utilities that are within or near the project vicinity will be investigated through potholing during the design phase of the project and will be modified as required during construction. Verification of utilities will require extensive potholing at the plans, specifications and estimates (PS&E) phase of this project. The utility owners within the project limits are the City of San Mateo, AT&T phone company, Comcast cable provider, Pacific Gas and Electric Company (PG&E) and Caltrans. Utility relocation costs have been included in the overall project estimates.

#### *Emergency Services*

No law enforcement, fire, or other emergency services should be affected by the project. Caltrans would notify the local California Highway Patrol (CHP) office and the Fire Department weekly of upcoming closures. CHP would also be on site at night if Caltrans is doing the construction inspection. The City transportation or traffic engineering staff would also be expected to do the same.

A TMP is anticipated to be prepared for the project and is discussed in the Avoidance, Minimization, and/or Mitigation Measures of the Traffic and Transportation/Pedestrian and Bicycle Facilities section of this chapter.

### **Avoidance Minimization and/or Mitigation Measures**

No avoidance, minimization, or mitigation measures are proposed.

## **TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES**

### **Affected Environment**

The *State Route 92 (SR 92)/El Camino Real (SR 82) Interchange Traffic Operations Report* was prepared for the project and completed in October, 2013. This report is available upon request.

### ***Existing Traffic Facilities***

The study corridor is located within San Mateo County and traverses the City of San Mateo. The freeway and interchange system in the study area includes:

SR 92, which extends between SR 238 also known as Mission Boulevard in Hayward to SR 1 in Half Moon Bay. SR 92 varies between two and seven lanes. The highway is classified as an arterial (Jackson Street) between SR 238 (Mission Boulevard) and Interstate 880 (I-880), a freeway between I-880 and Interstate 280 (I-280), and as a two-lane highway west of I-280. SR 92 also includes the San Mateo-Hayward Bridge, which connects Alameda County to San Mateo County. Within the study area, SR 92 is a four-lane freeway, with two lanes in each direction. Auxiliary lanes are provided between the El Camino Real loop ramps and between the Delaware Avenue and U.S. Highway 101 (US101) interchanges in both directions. An auxiliary lane is provided in the eastbound direction between the SR 82 on-ramp and Delaware Avenue off-ramp. In the westbound direction, although it is not striped, drivers treat the segment between the Delaware on-ramp and the SR 82 off-ramp as an auxiliary lane.

The SR 92/US 101 interchange is a Type F-3 freeway-to-freeway configuration that provides full access. All ramps are either single-lane or dual-lane entry or exit. This interchange provides access to the San Mateo Bridge.

The SR 92/South Delaware Street interchange is a hybrid Type L-1/L-6 configuration that provides full access. All ramps are a single-lane entry or exit and the ramp terminal intersections are signalized.

The SR 92/ SR 82 Interchange is a Type L-10 full cloverleaf configuration that provides full access. All ramps are single-lane entry or exit. Off-ramps are yield controlled at SR 82 and on-ramps are all free movements.

The SR 92/Alameda De Las Pulgas interchange is a Type L-1 tight diamond configuration that provides full access. All ramps are a single-lane entry or exit and ramp terminal intersections are signalized.

The SR 92/West Hillsdale Boulevard interchange is a hybrid Type L-1/L-9 configuration that provides full access. All ramps are a single-lane entry or exit and the ramp terminal intersections are signalized.

SR 82 is a four- to six-lane arterial that runs north-south along the San Francisco peninsula between San Jose and San Francisco. It primarily runs parallel to US 101.

In the study area it is a six-lane road with painted and raised medians and a posted speed limit of 35 mph.

Bovet Road is a four-lane collector with a posted speed limit of 25 mph. It serves office buildings and retail space between Borel Avenue and SR 82. It also provides signalized access at SR 82 for residences located off of Borel Avenue as well as Borel Middle School. Bovet Road ends at the railroad tracks to the east and changes to 17th Avenue east of SR 82.

17th Avenue is a two-lane collector with a posted speed limit of 25mph. It serves retail, multi-family residential, and single-family residential east of SR 82. 17th Avenue changes to Bovet Road west of SR 82.

20th Avenue is primarily a two-lane collector with a four-lane segment between Pioneer Court and SR 82. The posted speed limit is 25 mph. It serves retail, multi-family and single-family residential, as well as San Mateo City Hall.

### ***Existing Bicycle and Pedestrian Facilities***

Typical pedestrian facilities include sidewalks, crosswalks, and pedestrian signals at signalized intersections. Sidewalks are provided on both sides of SR 82, Bovet Road, 17<sup>th</sup> Avenue, and 20<sup>th</sup> Avenue. Crosswalks are provided across all legs of each signalized intersection with pedestrian signal heads. Crosswalks are also provided across the on and off-ramps at the interchange; however, the ramps are designed for higher vehicle speeds which are less conducive to pedestrian travel. Crosswalks across SR 82 are not provided at the ramp terminal intersections. This results in a distance of approximately 1,850 feet between marked pedestrian crossings on SR 82.

According to the City of San Mateo's Bicycle Master Plan, there are currently no bicycle facilities in the vicinity of the project location. Typical bicycle facilities are classified as the following:

- Bicycle paths (Class I) – Paved trails that are separated from roadways
- Bicycle lanes (Class II) – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs
- Bicycle routes (Class III) – Designated roadways for bicycle use by signs only and may or may not include additional pavement width for cyclists.

### ***Existing Public Transit***

The primary transit service provider offering service in the study area is San Mateo County Transit District (SamTrans). SamTrans currently operates four multi-city routes along SR 82 (SR 82) within the study area; bus Routes 390, 391, 397, and

ECR. Bus Routes 390 and 391 are commuter routes, 397 is a late night service running between 12:00 AM and 6:00 AM, and ECR is a weekend route. SamTrans also operates Bus Route 53 that uses SR 92 within the study area. Bus Route 53 provides service between San Mateo Park and Borel Middle School on school days only and is limited to school start and end times.

### ***Existing Rail Service***

Caltrain provides passenger rail service in San Mateo, connecting San Mateo with the San Francisco Peninsula between San Francisco and San Jose. Three stops serve the City of San Mateo: Hillsdale Boulevard, Hayward Park, and downtown San Mateo. Hayward Park is the closest station to the study area, located near the SR 92/Delaware Street interchange.

### ***Existing Truck Routes***

SR 92 within the study area is classified as a national Surface Transportation Assistance Act (STAA) truck route. SR 82 within the study area is classified as a Terminal Access truck route. STAA trucks may travel on Terminal Access routes. A map of the regional truck routes is provided in Appendix A of the Traffic Operations Analysis Report. Other STAA truck routes within the region include US 101, I-280, and I-380.

### ***Existing Traffic Conditions***

Local street performance is measured using the “level of service” (LOS) concept, whereby traffic demand is evaluated in the context of capacity. Since intersections are a key factor in determining the capacity of local streets, the adopted procedures of most jurisdictions focus on peak-hour operations at intersections. The methodology computes a level of service taking into account factors such as the demand for each traffic movement (i.e., left turns, straight, right turns), the number of lanes, and, where applicable, signal timing. As summarized in Table 5 below, level of service can range from “LOS A,” representing free-flow conditions, to “LOS F,” representing jammed/over-saturated conditions.

**Table 5. Signalized Intersection Level of Service Definitions**

Level of Service	Description	Average Control Delay * Per Vehicle (Seconds)
A	Progression is extremely favorable and most vehicles arrive during the green phase. Short cycle lengths may contribute to this low delay.	Up to 10.0
B	Good progression, short cycle lengths, or both. More vehicles stop than LOS A, causing higher level of delay	10.1 to 20.0
C	Fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant.	20.1 to 35.0
D	Influence of congestion becomes noticeable. Unfavorable progression, long cycle lengths, and high volume/capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.1 to 55.0
E	Poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.	55.1 to 80.0
F	Arrival flow rates exceed the capacity of the lane groups and the intersection is oversaturated. High v/c ratios with many individual cycle failures. Poor progression, long cycle lengths may also contribute significantly to high delay levels. This level, considered unacceptable to most drivers.	Greater than 80.0

**Source:** Transportation Research Board, *2010 Highway Capacity Manual*, (Washington D.C. 2010)

\*Average Control Delay includes the time for initial deceleration delay, queue move-up time, stopped delay, and final acceleration.

Additionally, the level of service concept can be applied to freeways as described in Table 6 below ranging from “LOS A,” representing free-flow speeds, to “LOS F,” representing a breakdown in flow.

**Table 6. Freeway Level of Service Definitions**

Level of Service	Description	Density (passenger cars/mile/lane)
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	Up to 11.0
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	11.1 to 18.0
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	18.1 to 26.0
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	26.1 to 35.0
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	35.1 to 45.0
F	Represents a breakdown in flow.	Greater than 45.0
Source: Transportation Research Board, <i>2010 Highway Capacity Manual</i> , (Washington D.C. 2010)		

### ***Traffic Operations Analysis Study Area***

The traffic operations analysis area for the SR 92/El Camino Real (SR 82) interchange project is located within the City of San Mateo in San Mateo County. The project study area evaluated the following intersections, road segments and on- and off-ramps:

#### ***Intersections***

1. SR 82/Bovet Road/17<sup>th</sup> Avenue
2. SR 82/WB SR 92 Ramps
3. SR 82/EB SR 92 Ramps
4. SR 82/20<sup>th</sup> Avenue

#### ***Freeway Mainline Segments***

1. SR 92 between US101 and Delaware Avenue
2. SR 92 between Delaware Avenue and SR 82
3. SR 92 between SR 82 and Alameda De Las Pulgas
4. SR 92 between Alameda De Las Pulgas and Hillsdale Boulevard

### ***Existing Peak Hour Network Performance Measures***

For the SR 82/92 Interchange project to reduce queuing and improve operations the traffic analysis examined the existing peak hour network measure of effectiveness. The following (Table 7) presents existing volume served, vehicle miles traveled, total travel time, average travel speed, total vehicle hours of delay and average delay per vehicle. The table shows that the existing traffic congestion and queuing on the highway network at the intersection on and off-ramps is causing 451 vehicle hours of delay in the AM peak hour (91.7 seconds of average delay per vehicle) and 554 vehicle hours of delay in the PM peak hour (103.9 seconds of average delay per vehicle) within the study limits. In addition, total vehicle travel time is high and traffic volume is not being served adequately at the interchange. The proposed Build Alternative would reduce delay and improve vehicle traffic volume served.

**Table 7. Existing Peak Hour Network Measure of Effectiveness**

<b>EXISTING PEAK HOUR NETWORK MEASURES OF EFFECTIVENESS</b>		
<b>Measure</b>	<b>AM Peak Hour</b>	<b>PM Peak Hour</b>
Volume Served	16,332	17,792
Vehicles Miles of Travel	32,985	33,361
Total Travel Time (hours)	1,104	1,248
Average Travel Speed (mph) <sup>1</sup>	29.9	26.7
Total Vehicle Hours of Delay	451	554
Average delay per Vehicle (s)	91.7	103.9
Notes: Average travel speed summary includes all network components, including mainline and ramps, and El Camino Real.		
Source: Fehr & Peers, 2013.		

Data collection efforts in the study area were undertaken during May and June 2012 to determine existing peak period traffic volumes, travel times, and mainline and intersection queuing characteristics within study area boundaries. In addition, mainline and ramp lane configurations were collected along SR 92 and intersection configurations and signal timings were collected at each of the study intersections. The analysis encompassed the weekday AM and PM peak periods that were defined as 7AM to 9AM and 4PM to 6PM, respectively.

***Existing Freeway and Ramp/Connector Congestion and Queuing Observations and Analysis: AM/PM Peaks***

*AM Peak Period*

*Eastbound SR 92*

At the El Camino Real (SR 82) interchange, the on-ramp volume from southbound SR 82 plus the upstream volume on SR 92 exceeds the capacity of SR 92. The short weave distance between loop on-ramp and loop off-ramp reduced capacity of SR 92 at the El Camino Real (SR 82) interchange. Table 8 shows how existing traffic queuing and congestion for eastbound SR 92 is leading to a low quality LOS, ranging from E-F at the SR 82/92 ramps segments, higher densities in vehicles per mile per lane (vpmp) and reduced vehicle speeds.

**Table 8. Existing Eastbound SR 92 AM Peak Hour Level of Service**

EXISTING EASTBOUND SR92 AM PEAK HOUR LEVEL OF SERVICE

Location	Type	LOS	Density (vpmpl)	Speed (mph)
Hillsdale Boulevard Off-Ramp	Diverge	E	35.3	40.4
Hillsdale Boulevard Off-Ramp to Eastbound Hillsdale Boulevard On-Ramp	Basic	D	32.0	51.5
Eastbound Hillsdale Boulevard On-Ramp	Merge	D	34.7	46.9
Westbound Hillsdale Boulevard On-Ramp	Merge	E	38.9	44.5
Hillsdale Boulevard On-Ramp to Alameda De Las Pulgas Off-Ramp	Basic	F	48.9	38.1
Alameda De Las Pulgas off-Ramp	Diverge	F	49.8	37.0
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	F	49.8	31.3
Alameda De Las Pulgas On-Ramp to Southbound El Camino Real Off-Ramp	Weave	F	48.0	33.3
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	E	43.9	40.1
Southbound El Camino Real On-Ramp to Southbound El Camino Real Off-Ramp	Weave	E	45.2	35.4
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	F	51.1	36.3
Northbound El Camino Real On-Ramp to Delaware Avenue Off-Ramp	Weave	E	42.7	37.5
Delaware Avenue Off-Ramp to Delaware Avenue Off-Ramp	Basic	D	33.5	49.7
Delaware Avenue On-Ramp to US101 Off-Ramp	Weave	E	37.7	36.5

Note: The level of service and average density for the study segment are consistent with the HCM methodology.  
 Source: Fehr & Peers, 2013

### Westbound SR 92

The short weave between US101 connector ramps and to Delaware Avenue off-ramp reduces the capacity of SR 92. At the Northbound SR 82 off-ramp queue spillback from the ramp-terminal intersection reaches the mainline. Table 9 shows how the existing westbound SR 92 traffic in the AM peak has a LOS of between LOS D-F, the vpmpl densities are in the mid-range to heavy congestion levels and there are reduced vehicle speeds.

**Table 9. Existing Westbound SR 92 AM Peak Hour Level of Service**

EXISTING WESTBOUND SR92 AM PEAK HOUR LEVEL OF SERVICE				
Location	Type	LOS	Density (vpmpl)	Speed (mph)
US101 On-Ramp to Delaware Avenue Off-Ramp	Weave	E	37.0	43.7
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	E	44.8	45.7
Delaware Avenue On-Ramp to Northbound El Camino Real Off-Ramp	Weave	F	46.0	37.4
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	F	45.2	39.8
Northbound El Camino Real Off-Ramp to Southbound El Camino Real Off-Ramp	Weave	D	33.8	46.7
Southbound El Camino Real Off-Ramp to Southbound EL Camino Real On-Ramp	Basic	D	31.0	53.9
Southbound El Cmaino Real On-Ramp to Alameda De Las Pulgas Off-Ramp	Weave	D	32.6	49.9
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	D	31.6	51.7
Alameda De Las Pulgas On-Ramp	Merge	E	35.9	45.3
Alameda De Las Pulgas On-Ramp to Hillsdale Boulevard Off-Ramp	Basic	E	42.7	43.7
Hillsdale Boulevard Off-Ramp	Diverge	E	38.9	45.7
Hillsdale Boulevard Off-Ramp to Hillsdale Boulevard On-Ramp	Basic	D	29.6	52.4
Hillsdale Boulevard On-Ramp	Merge	E	35.2	44.5
Note: The level of service and average density for th study segment are consistent with the HCM methodology.				
Source: Fehr & Peers, 2013				

### PM Peak Period

#### Eastbound SR 92

At the SR 82 I/C, the on-ramp volume from southbound SR 82 added to the eastbound SR 92 volume exceeds the capacity of SR 92. The short weave distance between loop on-ramp and loop off-ramp reduces capacity of SR 92 at the SR 82 interchange. The eastbound SR 92 PM Peak Period data shows LOS of between D-F, vpmpl densities in the mid-range to heavy congestion levels and reduced vehicle speeds.

Table 10 displays the existing eastbound SR 92 peak hour level of service.

**Table 10. Existing Eastbound SR 92 PM Peak Hour Level of Service**

EXISTING EASTBOUND SR92 PM PEAK HOUR LEVEL OF SERVICE

Location	Type	LOS	Density (vpmpl)	Speed (mph)
Hillsdale Boulevard Off-Ramp	Diverge	D	28.8	45.0
Hillsdale Boulevard Off-Ramp to Eastbound Hillsdale Boulevard On-Ramp	Basic	D	29.0	53.1
Eastbound Hillsdale Boulevard On-Ramp	Merge	D	32.3	47.6
Westbound Hillsdale Boulevard On-Ramp	Merge	E	36.9	45.6
Hillsdale Boulevard On-Ramp to Alameda De Las Pulgas Off-Ramp	Basic	E	42.7	43.6
Alameda De Las Pulgas off-Ramp	Diverge	F	59.9	31.2
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	F	57.2	26.7
Alameda De Las Pulgas On-Ramp to Southbound El Camino Real Off-Ramp	Weave	F	57.5	28.3
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	F	57.5	28.8
Southbound El Camino Real On-Ramp to Southbound El Camino Real Off-Ramp	Weave	E	43.4	36.3
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	E	44.4	41.4
Northbound El Camino Real On-Ramp to Delaware Avenue Off-Ramp	Weave	D	30.7	49.0
Delaware Avenue Off-Ramp to Delaware Avenue Off-Ramp	Basic	D	34.2	31.1
Delaware Avenue On-Ramp to US101 Off-Ramp	Weave	E	41.5	40.2

Note: The level of service and average density for th study segment are consistent with the HCM methodology.  
Source: Fehr & Peers, 2013

### *Westbound SR 92*

At the US 101 connector ramps to SR 92 the on-ramp volumes from US 101 to westbound SR 92 exceed capacity and the short weave between US 101 connector ramps and the Delaware Avenue off-ramp reduce the capacity of SR 92. At the northbound SR 82 off-ramp queue spillback from ramp-terminal intersection reaches the mainline. Data for the westbound SR 92 during the PM peak hour shows the majority of the locations in the E-F range, a greater proportion of vpmpl densities in the high mid-range to heavy congestion levels and reduced vehicle speeds.

Table 11, on the following page, displays the existing westbound SR 92 PM peak hour level of service.

**Table 11. Existing Westbound SR 92 PM Peak Hour Level of Service**

EXISTING WESTBOUND SR92 PM PEAK HOUR LEVEL OF SERVICE				
Location	Type	LOS	Density (vpmpl)	Speed (mph)
US101 On-Ramp to Delaware Avenue Off-Ramp	Weave	F	59.1	25.8
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	F	49.6	35.7
Delaware Avenue On-Ramp to Northbound El Camino Real Off-Ramp	Weave	F	62.2	28.1
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	F	50.4	33.5
Northbound El Camino Real Off-Ramp to Southbound El Camino Real Off-Ramp	Weave	E	41.6	36.4
Southbound El Camino Real Off-Ramp to Southbound EL Camino Real On-Ramp	Basic	F	46.5	36.2
Southbound El Cmaino Real On-Ramp to Alameda De Las Pulgas Off-Ramp	Weave	E	39.0	43.0
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	D	33.2	48.5
Alameda De Las Pulgas On-Ramp	Merge	E	44.1	36.5
Alameda De Las Pulgas On-Ramp to Hillsdale Boulevard Off-Ramp	Basic	E	41.9	45.0
Hillsdale Boulevard Off-Ramp	Diverge	E	40.3	44.3
Hillsdale Boulevard Off-Ramp to Hillsdale Boulevard On-Ramp	Basic	E	37.3	44.7
Hillsdale Boulevard On-Ramp	Merge	F	53.3	35.0
Note: The level of service and average density for th study segment are consistent with the HCM methodology.				
Source: Fehr & Peers, 2013				

Vehicle, pedestrian and bicycle intersection turning movement counts were collected during the weekday morning (7:00-9:00 AM) and evening (4:00-6:00 PM) peak periods on May 23, 2012 at the following intersections: SR 82/Bovet Road/17<sup>th</sup> Avenue and SR 82/20<sup>th</sup> Avenue. These locations are the first signalized intersections to the north and south of the SR 92/82 Interchange.

In addition, field observations were conducted of traffic congestion and vehicle queues at the study intersections during the morning and evening peak periods in May 2012. The following observations were made at the study intersections:

*SR 82/Bovet Road/17<sup>th</sup> Avenue*

During the morning and evening peak periods, northbound left-turning traffic consistently reached the capacity of the turn pocket; however, all queued vehicles would clear most cycles. During the morning and evening peak period, northbound through vehicle queues regularly extended to the westbound SR 92 off-ramp. In the evening peak period, westbound left-turning traffic was consistently queued beyond the adjacent intersection (Ivy Street) and did not clear every cycle due to the high volume of conflicting eastbound traffic and pedestrians. Vehicle queues on other movements cleared every cycle.

*SR 82/Westbound SR 92 Ramps*

During the morning and evening peak period, vehicle queuing on the westbound SR 92 off ramp to northbound SR 82 extended back to mainline SR 92. This was caused by vehicles on the off-ramp waiting for gaps in northbound SR 82 traffic and

by occasional queue spillback from the SR 82/Bovet Road/17th Avenue intersection. Vehicles did not queue on the other ramps.

#### *SR 82/Eastbound SR 92 Ramps*

During the morning and evening peak period, vehicle queuing on the eastbound SR 92 off-ramp to southbound SR 82 would reach four or five vehicles. This was caused by vehicles on the off-ramp waiting for gaps in southbound SR 82 traffic and by occasional queue spillback from the SR 82/20th Avenue intersection. Vehicles did not queue on the other ramps.

#### *SR 82/20th Avenue*

During the morning peak period, southbound through vehicle queues occasionally extended to the eastbound SR 92 off-ramp. In the evening peak period, southbound through vehicle queues often extended to the eastbound SR 92 off-ramp. During the morning and evening peak periods, southbound through vehicle queues blocked the southbound left-turn pocket and left-turning vehicles were not able to enter the pocket until the next cycle. During the morning and evening peak period, eastbound left-turning traffic was regularly queued beyond the adjacent two intersections (McAker Court and Wyoming Way) due to heavy vehicle traffic and keep clear zones at driveways and intersections. During the evening peak period, this queue did not clear every cycle. Vehicle queues on other movements cleared every cycle. Table 12 displays the existing intersection peak hour level of service organized by intersection, traffic control, peak hour, delay and LOS. Intersection level of service is LOS F at intersection #2 and in the PM peak at intersections #1 and #4 is LOS D.

**Table 12. Existing Intersection Peak Hour Level of Service**

<b>EXISTING INTERSECTION PEAK HOUR LEVEL OF SERVICE</b>				
<b>Intersection</b>	<b>Control<sup>1</sup></b>	<b>Peak Hour</b>	<b>Delay<sup>2</sup> (sec/Vehicle)</b>	<b>LOS</b>
1) El Camino Real/Bovet Road/17th Avenue	Signal	AM	27.6	C
		PM	41.4	D
2) El Camino Real/Westbound SR92 Ramps	Yield	AM	65	F (WB)
		PM	174.8	F (WB)
3) El Camino Real/Eastbound SR92 Ramps	Yield	AM	8.7	A (EB)
		PM	19.7	C (EB)
4) El Camino Real/20th Avenue	Signal	AM	30.2	C
		PM	37.3	D
Notes:				
1. Signal = signalized intersection, Yield = yield controlled off-ramps				
2. Signalized intersection level of service based on weighted average control delay per vehicle, yield controlled delay based on average delay per vehicle for the yield controlled approach.				
Source: Fehr & Peers, 2013				

**Traffic Demand**

Year 2018 (opening year) and Year 2038 (design year) traffic demand forecasts were used as the basis for the project alternatives traffic operational analysis. For each horizon year, the base or No Build forecasts were developed. Because the project is considered an operational improvement project, it was assumed that these modifications would not cause a change in the overall travel demands or origin-destination patterns within the study area, and would only result in the re-distribution of traffic between ramps at SR 82 and SR 92 interchange. The demand volumes at the four existing intersections along the study segment of SR 82 would not change from the No Build Alternative. The interchange modifications would only result in the re-distribution of traffic between the SR 92 interchange ramps and at the new intersections on SR 82.

**Environmental Consequences**

**Pedestrian and Bicycle Facilities**

The design shall apply the Caltrans Complete Streets Deputy Directive on Complete Streets - Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit riders, and motorists appropriate to the function and context of the facility. Caltrans is considering the following design conceptual elements that will further explored in the design phase:

An minimum of 8-feet in width sidewalk is planned on both sides of SR 82 from the outer edges of the on- and off-ramps.

A Class II bike lane is planned on SR 82 between the ramps of the intersection that is 5-feet in width in each direction. The lane is adjacent to the sidewalk the duration of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles onto the on-ramps.

A Class III signed bicycle route is planned on 20<sup>th</sup> Avenue east and west of SR 82. Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the City.

### ***Public Transit***

There are no proposed improvements to existing public transit service in the vicinity of the project.

### ***Rail Service***

There are no proposed railroad service improvements or impacts from this project.

### ***Truck Routes***

Under both the No Build and Build Alternative, the project proposes to add a truck climbing lane on SR 92 in the westbound direction beginning at the Alameda de Las Pulgas on-ramp west to the limits of the project study area.

## ***No Build Future Traffic Conditions***

### ***Opening Year (2018) Traffic Operations Analysis***

The following section presents the traffic analysis results for opening year (2018). The operations analysis focuses on intersection and mainline operations.

### ***Opening Year (2018) Analysis Results - AM Peak Period Conditions***

In the No Build alternative, bottlenecks identified under existing conditions are exacerbated with the increased traffic volume. During the AM peak hour, increased queue spillback from the westbound SR 92 off-ramp to northbound SR 82 results in worse operations in upstream segments of westbound SR 92 with LOS F conditions from the SR 82 off-ramp to the on-ramp from US101.

In the eastbound direction during the AM peak hour, the No Build alternative shows increased density over existing conditions. The bottleneck between the loop on-ramp and loop off-ramp at SR 82 causes vehicle queues that extend to the Alameda de las Pulgas off-ramp. Similar to existing conditions, congestion on southbound US101 causes queuing on the eastbound SR 92 to southbound US101 connector ramp during the AM peak hour. Network performance measures, freeway travel

times and intersection levels of service (LOS) for the No Build Alternative in opening year 2018, AM Peak Period Conditions, are discussed in detail in the *Opening Year (2018) Analysis Results - AM Peak Period Conditions* of the Environmental Consequences-Future Traffic Conditions portion of this section for comparative purposes.

#### *Opening Year (2018) Analysis Results - PM Peak Period Conditions*

During the PM peak hour, increased queue spillback from the westbound SR 92 off-ramp to northbound SR 82 results in worse operations in upstream segments of westbound SR 92 with LOS F conditions from the SR 82 off-ramp to the on-ramp from US101. Bottlenecks also develop between the southbound SR 82 diagonal on-ramp and the Alameda de Las Pulgas off-ramp, as well as at the Hillsdale Boulevard on-ramp due to increased demand that exceeds mainline capacity.

In the eastbound direction during the PM peak hour, the No Build alternative shows increased density over existing conditions. The bottleneck between the loop on-ramp and loop off-ramp at SR 82 causes vehicle queues that extend to the Hillsdale Boulevard interchange.

Network performance measures, freeway travel times and intersection levels of service (LOS) for the No Build Alternative in opening year 2018, PM Peak Period Conditions, are discussed in detail in the *Opening Year (2018) Analysis Results - PM Peak Period Conditions* of the Environmental Consequences-Future Traffic Conditions portion of this section for comparative purposes.

#### ***Build Alternative - Partial Cloverleaf Future Traffic Conditions***

##### *Opening Year (2018) Analysis Results – AM/PM Peak Period Conditions*

###### *AM Peak Period*

With the Build Alternative, queue spillback from the westbound SR 92 off-ramp to northbound SR 82 ramp terminal intersection is eliminated from the mainline. This results in increased mainline capacity through this segment and improved mainline operations upstream of the off-ramp. However, demand exceeds capacity between the Delaware Avenue off-ramp and on-ramp and the bottleneck shifts upstream to this segment. In the eastbound direction, the consolidation of the SR 82 loop and diagonal off-ramp into a single diagonal off-ramp under the Build Alternative removes the bottleneck between the loop on-ramp and loop off-ramp. However, during the AM peak hour, a bottleneck appears between the Alameda de las Pulgas on-ramp and SR 82 off-ramp due to demand exceeding capacity. A bottleneck also develops between the northbound SR 82 on-ramp and Delaware Avenue off-ramp; however, queuing is minimal.

###### *PM Peak Period*

During the PM peak hour, queue spillback from the westbound SR 92 off-ramp to northbound SR 82 ramp terminal intersection is eliminated from the mainline with the

Build Alternative. In the eastbound direction, a bottleneck develops between the SR 82 diagonal on-ramp and the Delaware Avenue off-ramp, as more traffic is able to reach this location with the elimination of the bottleneck between the loop ramps.

*Network Performance Measures*

Table 16 provides data on opening year (2018) peak AM/PM period comparison between the No Build and Build Alternatives based on the following measures of effectiveness: Volume Served, Vehicle Miles of Travel, Total Travel Time, Average Travel Speed, Total Vehicle Hours of Delay and Average Delay per Vehicle.

*Freeway Travel Times*

The Build Alternative shows improved network performance over the No Build Scenario in both the AM and PM peak periods. Total travel time is also reduced in the PM peak period and total vehicle hours of delay are reduced in both the AM and PM peak period. There is a large increase in volume served and a reduction in average delay per vehicle.

**Table 16. Opening Year (2018) Peak Period Network Measure of Effectiveness**

**OPENING YEAR (2018) PEAK PERIOD NETWORK MEASURES OF EFFECTIVENESS**

Measure	AM Peak Period			PM Peak Period		
	No Build	Partial Cloverleaf	% Change	No Build	Partial Cloverleaf	% Change
Volume Served	46,446	48,356	4.1%	53,319	53,663	0.6%
Vehicle Miles of Travel <sup>2</sup>	93,573	97,378	4.1%	99,372	98,875	-0.5%
Total Travel Time (hours)	3,568	2,641	-26.0%	3,450	2,862	-17.0%
Average Travel Speed (mph) <sup>1</sup>	26.2	36.9	40.8%	28.8	34.5	19.8%
Total Vehicle Hours of Delay	1,715	835	-51.3%	1,353	949	-29.9%
Average Delay per Vehicle (s)	128.6	61.2	-52.4%	90.1	62.8	-30.3%

Notes:

1. Average travel speed summary includes all network components, including mainline and ramps, and El Camino Real
  2. The decrease in vehicle miles of travel in the PM peak period is due to the removal of the loop off-ramps with the Partial Cloverleaf alternative which results in vehicles traveling a shorter distance on the diagonal off-ramps than on the loop off-ramps.
- Source: Fehr & Peers, 2013.

*Opening Year (2018) Peak Hour Level of Service*

Table 1-4 summarizes traffic operations models for AM and PM peak period, the peak hours (8:00 to 9:00 AM and 5:00 to 6:00 PM) for SR 92 westbound and eastbound directions at key freeway ramp junctions and mainline sections of SR92 through the study area. .

**Table 1 - Opening Year (2018) WB SR92 AM Peak Hour LOS**

Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
US101 On-Ramp to Delaware Avenue Off-Ramp	Weave	F	126.6	9.2	F	78.1	20.8
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	F	115.4	13.8	E <sup>1</sup>	53.8	38.8
Delaware Avenue On-Ramp to Northbound El Camino Real Off-Ramp	Weave	F <sup>2</sup>	84.2	25.0	E	36.8	45.2
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	E <sup>3</sup>	45.5	39.9	D	31.4	50.5
Northbound El Camino Real On-Ramp to Southbound El Camino Real Off-Ramp	Weave	D	34.0	47.0	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Southbound El Camino Real On-Ramp	Merge	N/A	N/A	N/A	D	31.3	51.4
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	D	32.6	52.4	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Alameda De Las Pulgas Off-Ramp	Weave	E	36.0	46.7	E	39.9	44.8
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	D	34.0	50.8	E	37.9	47.1
Alameda De Las Pulgas On-Ramp	Merge	E	38.8	44.5	E	42.5	42.0
Alameda De Las Pulgas On-Ramp to Hillsdale Boulevard Off-Ramp	Basic	E	45.1	43.2	E	50.7	40.4
Hillsdale Boulevard Off-Ramp	Diverge	E	39.6	46.4	E	44.5	43.2
Hillsdale Boulevard Off-Ramp to Hillsdale Boulevard On-Ramp	Basic	D	31.9	51.1	E	35.5	47.9
Hillsdale Boulevard On-Ramp	Merge	E	38.6	42.5	E	44.2	39.7

Notes: The level of service and average density for the study segment are consistent with the HCM methodology.

1. This is a bottleneck location, and therefore, by definition, operates at LOS E.

2. This bottleneck is caused by queue spillback from the off-ramp terminal intersection

3. Speeds and observations of the model indicate that this segment is not in queue and therefore operate at LOS E.

Source: Fehr & Peers, 2013

**Table 2 - Opening Year (2018) WB SR92 PM Peak Hour LOS**

Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
US101 On-Ramp to Delaware Avenue Off-Ramp	Weave	F	101.2	14.7	D	31.2	48.4
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	F	98.9	18.3	E	39.3	49.3
Delaware Avenue On-Ramp to Northbound El Camino Real Off-Ramp	Weave	F <sup>2</sup>	84.6	21.8	E	38.9	40.4
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	F	60.4	31.9	E	38.7	41.9
Northbound El Camino Real On-Ramp to Southbound El Camino Real Off-Ramp	Weave	F	51.6	34.0	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Southbound El Camino Real On-Ramp	Merge	N/A	N/A	N/A	E	43.5	39.0
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	F	58.9	31.9	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Alameda De Las Pulgas Off-Ramp	Weave	E <sup>1</sup>	50.4	37.8	E <sup>1</sup>	46.6	40.6
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	E	40.8	42.9	D	34.0	50.7
Alameda De Las Pulgas On-Ramp	Merge	F	60.3	31.7	F	47.5	38.3
Alameda De Las Pulgas On-Ramp to Hillsdale Boulevard Off-Ramp	Basic	F	50.8	41.7	F	52.3	41.0
Hillsdale Boulevard Off-Ramp	Diverge	F	56.8	35.9	F	59.2	33.8
Hillsdale Boulevard Off-Ramp to Hillsdale Boulevard On-Ramp	Basic	F	60.6	31.5	F	65.4	28.5
Hillsdale Boulevard On-Ramp	Merge	E <sup>1</sup>	75.5	28.6	E <sup>1</sup>	69.8	26.9

Notes: The level of service and average density for the study segment are consistent with the HCM methodology.

1. This is a bottleneck location, and therefore, by definition, operates at LOS E.
2. This bottleneck is caused by queue spillback from the off-ramp terminal intersection

Source: Fehr & Peers, 2013

**Table 3 - Opening Year (2018) EB SR92 AM Peak Hour LOS**

Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
Hillsdale Boulevard Off-Ramp	Diverge	D	34.8	43.2	E	36.8	42.0
Hillsdale Boulevard Off-Ramp to Eastbound Hillsdale Boulevard On-Ramp	Basic	D	33.3	50.9	D	34.5	50.2
Eastbound Hillsdale Boulevard On-Ramp	Merge	E	36.0	46.7	E	37.1	45.8
Westbound Hillsdale Boulevard On-Ramp	Merge	E	40.9	44.2	E	42.2	43.3
Hillsdale Boulevard On-Ramp to Alameda De Las Pulgas Off-Ramp	Basic	F	53.5	36.8	F	47.4	42.0
Alameda De Las Pulgas Off-Ramp	Diverge	F	62.4	32.2	F	48.4	40.8
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	F	79.5	21.8	F	44.9	37.1
Alameda De Las Pulgas On-Ramp to Southbound El Camino Real Off-Ramp	Weave	F	92.3	20.7	E <sup>1</sup>	52.6	34.4
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	F	93.1	20.3	E	36.8	45.3
Southbound El Camino Real On-Ramp to Northbound El Camino Real Off-Ramp	Weave	E <sup>1</sup>	66.4	27.0	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Northbound El Camino Real On-Ramp	Merge	N/A	N/A	N/A	F	53.3	33.7
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	E <sup>2</sup>	54.1	36.5	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Delaware Avenue Off-Ramp	Weave	E	43.9	38.8	E <sup>1</sup>	47.2	37.1
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	E	36.3	49.5	E	37.7	49.0
Delaware Avenue On-Ramp to US101 Off-Ramp	Weave	F	45.3	34.5	F	45.1	37.6

Notes: The level of service and average density for the study segment are consistent with the HCM methodology.

1. This is a bottleneck location, and therefore, by definition, operates at LOS E.

2. Speeds and observations of the model indicate that these segments are not in queue and therefore operate at LOS E.

Source: Fehr & Peers, 2013

**Table 4 - Opening Year (2018) EB SR92 Peak Hours LOS**

Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
Hillsdale Boulevard Off-Ramp	Diverge	F	62.3	29.6	D	30.2	45.6
Hillsdale Boulevard Off-Ramp to Eastbound Hillsdale Boulevard On-Ramp	Basic	F	86.8	27.2	D	30.0	52.8
Eastbound Hillsdale Boulevard On-Ramp	Merge	F	91.3	22.3	D	33.3	47.2
Westbound Hillsdale Boulevard On-Ramp	Merge	F	93.5	20.0	E	39.0	45.9
Hillsdale Boulevard On-Ramp to Alameda De Las Pulgas Off-Ramp	Basic	F	98.8	19.3	F	47.4	41.9
Alameda De Las Pulgas Off-Ramp	Diverge	F	100.0	18.8	F	49.4	38.9
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	F	79.4	19.4	F	40.1	42.1
Alameda De Las Pulgas On-Ramp to Southbound El Camino Real Off-Ramp	Weave	F	78.9	22.5	E	38.9	41.4
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	F	61.9	27.5	D	31.8	47.6
Southbound El Camino Real On-Ramp to Northbound El Camino Real Off-Ramp	Weave	E <sup>1</sup>	53.3	30.7	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Northbound El Camino Real On-Ramp	Merge	N/A	N/A	N/A	E <sup>2</sup>	45.2	36.4
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	E <sup>2</sup>	45.9	41.4	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Delaware Avenue Off-Ramp	Weave	E	35.9	45.7	E <sup>1</sup>	45.1	38.1
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	D	34.7	52.2	E	38.8	48.8
Delaware Avenue On-Ramp to US101 Off-Ramp	Weave	D	31.6	48.0	D	34.6	46.0

Notes: The level of service and average density for the study segment are consistent with the HCM methodology.  
 1. This is a bottleneck location, and therefore, by definition, operates at LOS E.  
 2. Speeds and observations of the model indicate that these segments are not in queue and therefore operate at LOS E.  
 Source: Fehr & Peers, 2013

### *Intersection Level of Service*

Operations at the SR 82/Bovet Road/17th Avenue are expected to degrade to LOS F during the PM peak hour. The SR 82/20th Avenue intersection operates similarly to existing conditions under the No Build alternative. The westbound SR 92 off-ramp to northbound SR 82 yield-controlled movement continues to operate at LOS F during both the AM and PM peak periods. Additionally, the eastbound SR 92 off-ramp to southbound SR 82 off-ramp operates at LOS E during the PM peak period in the No Build alternative. This is caused by queue spillback from the SR 82/20th Avenue intersection to the ramp.

Under the Build Alternative, the two existing and two proposed traffic signals are operated as a coordinated system. It was also assumed that right turns on red would be prohibited for the westbound right-turn at the westbound SR 92 ramp terminal intersection and the eastbound right-turn at the eastbound SR 92 ramp terminal intersection when pedestrians are present. This is to avoid a multiple threat situation for pedestrians in the crosswalk and would be accomplished with an extinguishable message sign.

Under the Build Alternative, the ramp terminal intersections operate at LOS B during the AM and PM peak hours. This is largely due to the coordination between all four signalized intersections that provides signal progression through the corridor. Therefore, the additional signals add little delay to the system overall. LOS at the SR 82/Bovet Road/17th Avenue and SR 82/20th Avenue intersections is not shown to change between the No Build and Build Alternatives.

The peak hour intersection delay and LOS are presented in **Table 17**.

**Table 17. Opening Year (2018) Intersection Peak Hour Level of Service**

OPENING YEAR (2018) INTERSECTION PEAK HOUR LEVEL OF SERVICE						
Intersection	Control <sup>1</sup>	Peak Hour	No Build		Partial Cloverleaf	
			Delay <sup>2</sup> (sec/Vehicle)	LOS	Delay <sup>2</sup> (sec/Vehicle)	LOS
1) El Camino Real/Bovet Road/17th Avenue	Signal	AM	30.7	C	31.4	C
		PM	95.2	F	73.3	E
2) El Camino Real/Westbound SR92 Ramps	Yield/Signal <sup>3</sup>	AM	>100	F (WB)	16.8	B
		PM	>100	F (WB)	17.5	B
3) El Camino Real/Eastbound SR92 Ramps	Yield	AM	11.6	B (EB)	13.6	B
		PM	44.0	E (EB)	13.9	B
4) El Camino Real/20th Avenue	Signal	AM	28.9	C	31.2	C
		PM	42.5	D	49.1	D
Notes:						
1. Signal = signalized intersection, Yield = yield controlled off-ramps						
2. Signalized intersection level of service based on weighted average control delay per vehicle, yield controlled delay based on average delay per vehicle for the yield controlled approach.						
3. Intersection has yield controlled off-ramps under the No Build scenario and signalized control under the Partial Cloverleaf scenario. Yield controlled delay is reported for the No Build scenario and average intersection control delay is reported for the Partial Clover leaf scenario.						
Source: Fehr & Peers, 2013						

*Design Year (2038) Analysis Results – AM/PM Peak Period Conditions*

This section presents the traffic operations analysis results for design year (2038). The operations analysis focuses on mainline, intersection, and ramp operations. For this analysis the following planned projects were included for both the No Build and Build Alternatives:

- Add a dedicated right-turn pocket on southbound SR 82 at the 20<sup>th</sup> Avenue intersection.
- Add a truck climbing lane on SR 92 in the westbound direction beginning at the Alameda de Las Pulgas on-ramp west to the limits of the project study area.

*Network Performance Measures*

Table 20 provides data on design year (2038) peak AM/PM peak period comparison between the No Build and Build Alternatives based on the following measures of effectiveness: Volume Served, Vehicle Miles of Travel, Total Travel Time, Average Travel Speed, Total Vehicle Hours of Delay and Average Delay per Vehicle.

*Freeway Travel Times*

As shown in Table 20, The Build Alternative provides substantial improvement in network operations over the No Build alternative with large decreases in travel time and delay and increases in average speed and volume served.

### *Intersection Level of Service (LOS)*

The peak hour delay and LOS are presented in Table 21. The SR 82/Bovet Road/17th Avenue intersection is shown to operate at LOS E during the AM peak hour and LOS F during the PM peak hour under the No Build alternative. The SR 82/20th Avenue intersection is shown to operate at LOS F during the PM peak hour under the No Build alternative. The westbound SR 92 off-ramp to northbound SR 82 movement continues to operate at LOS F during both the AM and PM peak periods. The eastbound SR 92 off-ramp to southbound SR 82 movement is shown to operate at LOS F during the PM peak hour.

Under the Build Alternative, the two existing and two proposed traffic signals are operated as a coordinated system. It was also assumed that right turns on red would be prohibited for the westbound right-turn at the westbound SR 92 ramp terminal intersection and the eastbound right-turn at the eastbound SR 92 ramp terminal intersection when pedestrians are present. This is to avoid a multiple-threat situation for pedestrians in the crosswalk and would be accomplished with an extinguishable message sign.

Under the Build Alternative, the westbound SR 92 ramp terminal intersection operates at LOS C during the AM and PM peak hours. The eastbound SR 92 ramp terminal intersection is expected to operate at LOS B during the AM peak period and LOS C during the PM peak period. This is largely due to the coordination between all four signalized intersections that provides signal progression through the corridor. Therefore, the additional signals add little delay to the system overall. LOS at the SR 82/Bovet Road/17th Avenue and the SR 82/20th Avenue intersections are not shown to change between the No Build and Build Alternatives.

### *No Build - Design Year (2038) Analysis Results - AM Peak Period Conditions*

The eastbound SR 92 on-ramp loops with metering would exceed storage capacity during the AM peak period.

In the No Build alternative, bottlenecks identified under existing conditions are exacerbated with the increased traffic volume. During the AM peak hour, increased queue spillback from the westbound SR 92 off-ramp to northbound SR 82 further reduces mainline SR 92 capacity and results in worse operations from the SR 82 off-ramp to the on-ramp from US101 and substantial vehicle queuing.

In the eastbound direction, the bottleneck between the loop on-ramp and loop off-ramp at SR 82 causes vehicle queues that extend outside of the study area during the AM peak hour. Similar to existing conditions, congestion on southbound US101 causes queuing on the eastbound SR 92 to southbound US101 connector on-ramp during the AM peak hour; however, the queue increases in 2038 due to increased demand.

Network performance measures, freeway travel times and intersection levels of service (LOS) for the No Build Alternative in design year 2038, AM Peak Period

Conditions, are discussed in detail in the *Design Year (2038) Analysis Results - AM Peak Period Conditions* of the *Environmental Consequences-Future Traffic Conditions* portion of this section for comparative purposes.

*No Build - Design Year (2038) Analysis Results - PM Peak Period Conditions*

In the No Build alternative, bottlenecks identified under existing conditions and 2018 are exacerbated with the increased traffic volume. During the PM peak hour, increased queue spillback from the westbound SR 92 off-ramp to northbound SR 82 further reduces mainline SR 92 capacity and results in worse operations from the SR 82 off-ramp to the on-ramp from US 101 and substantial vehicle queuing.

In the eastbound direction, the bottleneck between the loop on-ramp and loop off-ramp at SR 82 causes vehicles queues that extend outside of the study area during the PM peak hour. Network performance measures, freeway travel times and intersection levels of service (LOS) for the No Build Alternative in design year 2038, PM Peak Period Conditions, are discussed in detail in the *Design Year (2038) Analysis Results - PM Peak Period Conditions* of the *Environmental Consequences-Future Traffic Conditions* portion of this section for comparative purposes.

**Table 18 Design Year (2038) EB and WB SR 92 AM Peak Hour Level of Service**

DESIGN YEAR (2038) EASTBOUND SR92 AM PEAK HOUR LEVEL OF SERVICE							
Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
Hillsdale Boulevard Off-Ramp	Diverge	F	131.9	8.5	F	71.9	24
Hillsdale Boulevard Off-Ramp to Eastbound Hillsdale Boulevard On-Ramp	Basic	F	145.7	9	F	91.7	22.8
Eastbound Hillsdale Boulevard On-Ramp	Merge	F	133.5	9.4	F	93.7	20.5
Westbound Hillsdale Boulevard On-Ramp	Merge	F	127	10.9	F	95.5	20
Hillsdale Boulevard On-Ramp to Alameda De Las Pulgas Off-Ramp	Basic	F	127.2	12	F	96.3	20.2
Alameda De Las Pulgas Off-Ramp	Diverge	F	130.7	11.6	F	100.7	19.2
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	F	140.2	9.1	F	109	15.8
Alameda De Las Pulgas On-Ramp to Southbound El Camino Real Off-Ramp	Weave	F	114.3	13.5	E <sup>1</sup>	90.1	24
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	F	109.3	15.6	F	57.7	34.4
Southbound El Camino Real On-Ramp to Northbound El Camino Real Off-Ramp	Weave	E <sup>1</sup>	67.7	26.2	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Northbound El Camino Real On-Ramp	Merge	N/A	N/A	N/A	F	62.7	30.7
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	E <sup>2</sup>	51.5	37.9	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Delaware Avenue Off-Ramp	Weave	E	41.4	41	E <sup>1</sup>	57.2	33.2
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	E	38.8	50.7	E <sup>2</sup>	57.2	41.1
Delaware Avenue On-Ramp to US101 Off-Ramp	Weave	F	55.7	32.4	F	72	28.2

Note: The level of service and average density for the study segment are consistent with the HCM methodology.

1. This is a bottleneck location, and therefore, by definition, operates at LOS E.

2. Speeds and observations of the model indicate that these segments are not in queue and therefore operate at LOS E.

Source: Fehr & Peers, 2013

## Design Year (2038) Westbound SR 92 AM Peak Hour Level of Service

DESIGN YEAR (2038) WESTBOUND SR92 AM PEAK HOUR LEVEL OF SERVICE							
Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
US101 On-Ramp to Delaware Avenue Off-Ramp	Weave	F	146.4	5.9	F	92.6	16.6
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	F	132.5	9.6	E <sup>1</sup>	55.4	36.6
Delaware Avenue On-Ramp to Northbound El Camino Real Off-Ramp	Weave	F <sup>2</sup>	87.8	23.4	E <sup>3</sup>	49.8	36.6
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	C	22.8	48.6	D	28.8	52.8
Northbound El Camino Real On-Ramp to Southbound El Camino Real Off-Ramp	Weave	B	17.4	54.5	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Southbound El Camino Real On-Ramp	Merge	N/A	N/A	N/A	D	28.4	54.5
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	B	16.8	61.5	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Alameda De Las Pulgas Off-Ramp	Weave	B	18.6	60.1	E	41.7	43.5
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	C	21.2	61.6	D	30.6	60.8
Alameda De Las Pulgas On-Ramp	Merge	B	18.0	60.5	C	26.5	61.1
Alameda De Las Pulgas On-Ramp to Hillsdale Boulevard Off-Ramp	Basic	B	16.9	62.1	C	22.9	61.7
Hillsdale Boulevard Off-Ramp	Diverge	B	15.9	62.0	C	21.2	61.6
Hillsdale Boulevard Off-Ramp to Hillsdale Boulevard On-Ramp	Basic	B	14.7	62.2	C	19.4	61.9
Hillsdale Boulevard On-Ramp	Merge	B	16.0	59.9	C	20.6	59.6
Notes: The level of service and average density for the study segment are consistent with the HCM methodology.							
1. This is a bottleneck location, and therefore, by definition, operates at LOS E.							
2. This bottleneck is caused by queue spillback from the off-ramp terminal intersection							
3. Speeds and observations of the model indicate that these segments are not in queue and operate at LOS E.							
Source: Fehr & Peers, 2013							

**Table 19. Design Year (2038) EB and WB SR 92 PM Peak Hour Level of Service**

DESIGN YEAR (2038) EASTBOUND SR92 PM PEAK HOUR LEVEL OF SERVICE							
Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
Hillsdale Boulevard Off-Ramp	Diverge	F	143.7	6.8	E	35.9	43.8
Hillsdale Boulevard Off-Ramp to Eastbound							
Hillsdale Boulevard On-Ramp	Basic	F	159.7	7.2	D	31.7	56
Eastbound Hillsdale Boulevard On-Ramp	Merge	F	142.1	7.9	E	36.1	50
Westbound Hillsdale Boulevard On-Ramp	Merge	F	131	10.2	E	41.8	48.7
Hillsdale Boulevard On-Ramp to Alameda De Las Pulgas Off-Ramp	Basic	F	132.3	11.9	E	40.9	55.6
Alameda De Las Pulgas Off-Ramp	Diverge	F	126.7	12.7	F	50	45.7
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	F	104.7	13.3	F	83.2	22.8
Alameda De Las Pulgas On-Ramp to Southbound El Camino Real Off-Ramp	Weave	F	82.3	22.2	E <sup>1</sup>	66.2	33.8
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	F	50.8	33.1	D	33.1	53.6
Southbound El Camino Real On-Ramp to Northbound El Camino Real Off-Ramp	Weave	E <sup>1</sup>	46.2	34	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Northbound El Camino Real On-Ramp	Merge	N/A	N/A	N/A	E	45	42.8
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	E	42.1	43.9	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Delaware Avenue Off-Ramp	Weave	D	31.8	50.2	E	41.5	45.6
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	D	28.3	60.2	D	32.2	58.7
Delaware Avenue On-Ramp to US101 Off-Ramp	Weave	D	28.6	52.4	D	31.8	51.4

Note: The level of service and average density for the study segment are consistent with the HCM methodology.

1. This is a bottleneck location, and therefore, by definition, operates at LOS E.

Source: Fehr & Peers, 2013

DESIGN YEAR (2038) WESTBOUND SR92 PM PEAK HOUR LEVEL OF SERVICE							
Location	Type	No Build			Partial Cloverleaf		
		LOS	Density (vpmpl)	Speed (mph)	LOS	Density (vpmpl)	Speed (mph)
US101 On-Ramp to Delaware Avenue Off-Ramp	Weave	F	140.4	7.1	F	85.1	20.9
Delaware Avenue Off-Ramp to Delaware Avenue On-Ramp	Basic	F	127.1	11.4	F	103.0	17.2
Delaware Avenue On-Ramp to Northbound El Camino Real Off-Ramp	Weave	F <sup>2</sup>	91.3	20.5	E <sup>1</sup>	42.8	39.5
Northbound El Camino Real Off-Ramp to Northbound El Camino Real On-Ramp	Basic	E	43.6	34.2	D	34.5	50.5
Northbound El Camino Real On-Ramp to Southbound El Camino Real Off-Ramp	Weave	E	35.4	37.3	N/A	N/A	N/A
Northbound El Camino Real On-Ramp to Southbound El Camino Real Off-Ramp	Merge	N/A	N/A	N/A	E	36.0	51.3
Southbound El Camino Real Off-Ramp to Southbound El Camino Real On-Ramp	Basic	E	39.2	37.5	N/A	N/A	N/A
Southbound El Camino Real On-Ramp to Alameda De Las Pulgas Off-Ramp	Weave	D	31.3	48.2	E	40.5	49.4
Alameda De Las Pulgas Off-Ramp to Alameda De Las Pulgas On-Ramp	Basic	C	26.0	53.6	D	33.8	53.4
Alameda De Las Pulgas On-Ramp	Merge	D	28.9	45.6	D	30.7	54.6
Alameda De Las Pulgas On-Ramp to Hillsdale Boulevard Off-Ramp	Basic	C	22.0	60.0	D	26.4	61.3
Hillsdale Boulevard Off-Ramp	Diverge	B	19.8	61.8	C	24.5	60.9
Hillsdale Boulevard Off-Ramp to Hillsdale Boulevard On-Ramp	Basic	B	17.9	62.0	C	21.6	61.5
Hillsdale Boulevard On-Ramp	Merge	C	20.8	58.4	C	25.1	56.9

Note: The level of service and average density for the study segment are consistent with the HCM methodology.

1. This is a bottleneck location, and therefore, by definition, operates at LOS E.
2. This bottleneck is caused by queue spillback from the off-ramp terminal intersection

Source: Fehr & Peers, 2013

**Table 20. Design Year (2038) Peak Period Network Measures of Effectiveness**

**DESIGN YEAR (2038) PEAK PERIOD NETWORK MEASURES OF EFFECTIVENESS**

Measure	AM Peak Period			PM Peak Period		
	No Build	Partial Cloverleaf	% Change	No Build	Partial Cloverleaf	% Change
Volume Served	46,334	54,778	18.2%	54,862	60,425	10.1%
Vehicle Miles of Travel	86,726	109,879	26.7%	93,543	108,155	15.6%
Total Travel Time (hours)	7,471	4,962	-33.6%	8,243	5,396	-34.5%
Average Travel Speed (mph) <sup>1</sup>	11.6	22.1	90.5%	11.3	20	77.0%
Total Vehicle Hours of Delay	5,712	2,777	-51.4%	6,276	3,308	-47.3%
Average Delay per Vehicle (s)	418.8	175.6	-58.1%	392.7	192.3	-51.0%

Notes:

1. Average travel speed summary includes all network components, including mainline and ramps, and El Camino Real  
Source: Fehr & Peers, 2013.

**Table 21. Design Year (2038) Intersection Peak Hour Level of Service**

DESIGN YEAR (2038) INTERSECTION PEAK HOUR LEVEL OF SERVICE						
Intersection	Control <sup>1</sup>	Peak Hour	No Build		Partial Cloverleaf	
			Delay <sup>2</sup> (sec/Vehicle)	LOS	Delay <sup>2</sup> (sec/Vehicle)	LOS
1) El Camino Real/Bovet Road/17th Avenue	Signal	AM	78.1	E	76.8	E
		PM	>100	F	>100	F
2) El Camino Real/Westbound SR92 Ramps	Yield/Signal <sup>3</sup>	AM	>100	F (WB)	26.6	C
		PM	>100	F (WB)	20.8	C
3) El Camino Real/Eastbound SR92 Ramps	Yield/Signal <sup>3</sup>	AM	9.4	A (EB)	15.1	B
		PM	>100	F (EB)	21.4	C
4) El Camino Real/20th Avenue	Signal	AM	33.1	D	42.2	D
		PM	81.3	F	>100	F

Notes:

1. Signal = signalized intersection, Yield = yield controlled off-ramps
2. Signalized intersection level of service based on weighted average control delay per vehicle, yield controlled delay based on average delay per vehicle for the yield controlled approach.
3. Intersection has yield controlled off-ramps under the No Build scenario and signalized control under the Partial Cloverleaf scenario. Yield controlled delay is reported for the No Build scenario and average intersection control delay is reported for the Partial Clover leaf scenario.

Source: Fehr & Peers, 2013

## **Project Alternatives**

### *Queuing and Weaving*

#### **No Build Alternative**

The No Build Alternative assumes no change to the existing four quadrant cloverleaf SR 92/82 Interchange. The No-Build Alternative analyzes project conditions if the proposed improvements were not to be constructed. The queuing and weaving at the SR 92/82 Interchange would continue to worsen if the current interchange is not modified. The City of San Mateo is planned project to add a dedicated right-turn pocket on southbound SR 82 at the SR 82 at 20<sup>th</sup> Avenue intersection was included in the No Build alternative. All other lane configurations at the study intersections remain the same as existing under the No Build alternative. Existing lane configuration on SR 92 and interchanges throughout the study area were used for the No-Build alternative.

#### **Build Alternative**

The partial cloverleaf design would eliminate the short weaving distances on SR 92 between the loop on and off-ramps to and from SR 82. It is proposed to remove the southeast and the northwest quadrant loops. Two new signalized intersections would be created at new on and off-ramps on SR 82.

### *Ramp Metering*

Ramp metering was assumed for all on-ramps within the study area for both the No Build and Build Alternative in the design year. It was assumed that the ramp metering would be added to the existing single-lane on-ramps in the No Build alternative. In the Build Alternative, the on-ramps at the SR 92/82 Interchange would be widened to two lanes.

#### **No Build Alternative**

The No Build alternative includes ramp metering at each of the on-ramps. Under the No Build, ramp widening would not occur; therefore the ramp metering would be installed on the existing single-lane on-ramps.

The eastbound SR 92 loop on-ramp would exceed storage capacity, even at the highest metering rate, during both the AM and PM peak hours in the No Build alternative. The westbound SR 92 diagonal loop on-ramp would also exceed storage capacity at the highest metering rate during the AM peak hour. It was assumed that for those ramps that exceed the storage capacity, the ramp meter would rest in green to avoid queue spillback onto SR 82.

*Build Alternative*

A two lane ramp metering design would be provided with the partial cloverleaf design. For the southbound SR 82 to eastbound SR 92 on-ramp, two mixed flow lanes would be provided to accommodate the high vehicle volume. At the other on-ramps, one mixed-flow lane open to all vehicles and one HOV lane would be provided.

Both the Build Alternative and No Build Alternative would have the same traffic volumes but would provide different amounts of vehicle storage on the on-ramps. Maximum and minimum queue lengths are based on Caltrans' lower and upper metering output limits of 240 and 900 vehicles per hour per lane (vphpl). Therefore, the maximum queue lengths are calculated using the lowest metering flow rate of 240 vphpl and the minimum queue lengths are calculated using the highest metering flow rate of 900 vphpl. Resulting queue lengths are the expected queue lengths at the end of the analyzed peak hour.

**Table 13. Design Year (2038) Ramp Metering Queuing Summary for No Build Alternative (AM/PM Peak Hour)**

DESIGN YEAR (2038) RAMP METERING QUEUING SUMMARY FOR NO BUILD ALTERNATIVE												
AM Peak Hour												
Ramp	# of SOV Lanes	# of HOV Lanes	Storage Per Lane (Vehicles)	Metered Volumes Per Lane	Metering Rate (Vehicles Per Hour)							
					900	800	700	600	500	400	300	240
EB Loop On-Ramp	1	0	13	978	Queue Per Lane (Vehicles)							
					77	177	277	377	477	577	677	737
					Exceed Storage?							
					YES	YES	YES	YES	YES	YES	YES	YES
EB Diagonal On-Ramp	1	0	16	518	Queue Per Lane (Vehicles)							
					0	0	0	0	17	117	217	277
					Exceed Storage?							
					NO	NO	NO	NO	YES	YES	YES	YES
WB Loop On-Ramp	1	0	14	162	Queue Per Lane (Vehicles)							
					0	0	0	0	0	0	0	0
					Exceed Storage?							
					NO	NO	NO	NO	NO	NO	NO	NO
WB Diagonal On-Ramp	1	0	17	931	Queue Per Lane (Vehicles)							
					32	132	232	332	432	532	632	692
					Exceed Storage?							
					YES	YES	YES	YES	YES	YES	YES	YES

Notes: For ramp metering queuing analysis, 1 vehicle = 30 feet.  
Source: Fehr & Peers, 2013.

PM Peak Hour												
Ramp	# of SOV Lanes	# of HOV Lanes	Storage Per Lane (Vehicles)	Metered Volumes Per Lane	Metering Rate (Vehicles Per Hour)							
					900	800	700	600	500	400	300	240
EB Loop On-Ramp	1	0	13	1409	Queue Per Lane (Vehicles)							
					508	608	708	808	908	1008	1108	1168
					Exceed Storage?							
					YES	YES	YES	YES	YES	YES	YES	
EB Diagonal On-Ramp	1	0	16	824	Queue Per Lane (Vehicles)							
					0	24	124	224	324	424	524	584
					Exceed Storage?							
					NO	YES	YES	YES	YES	YES	YES	
WB Loop On-Ramp	1	0	14	289	Queue Per Lane (Vehicles)							
					0	0	0	0	0	0	0	48
					Exceed Storage?							
					NO	NO	NO	NO	NO	NO	YES	
WB Diagonal On-Ramp	1	0	17	736	Queue Per Lane (Vehicles)							
					0	0	35	135	235	335	435	495
					Exceed Storage?							
					NO	NO	YES	YES	YES	YES	YES	

Notes: For ramp metering queuing analysis, 1 vehicle = 30 feet.  
Source: Fehr & Peers, 2013.

The 2038 ramp metering queuing summary for the No Build Alternative are presented in Table 13 and the results for the 2038 Build Alternative are presented in Table 14. The on-ramp locations that would exceed storage capacity during the AM and PM peak hour period are highlighted in grey. Comparing the storage capacity for the No Build and the Build Alternative in Tables 13 and 14 clearly shows an improvement in vehicle storage capacity with the Partial Cloverleaf design. The analysis shows that the partial cloverleaf design provides sufficient storage to accommodate vehicle queues within the on-ramps.

Ramp metering calculation sheets are available in the traffic study (TOAR).

**Table 14. Design Year (2038) Ramp Metering Queuing Summary for Partial Cloverleaf Alternative (AM/PM Peak Hour)**

DESIGN YEAR (2038) RAMP METERING QUEUING SUMMARY FOR PARTIAL CLOVERLEAF ALTERNATIVE												
AM Peak Hour												
Ramp	# of SOV Lanes	# of HOV Lanes	Storage Per Lane (Vehicles)	SOV Volumes Per Lane <sup>2</sup>	Metering Rate (Vehicles Per Hour)							
					900	800	700	600	500	400	300	240
EB Loop On-Ramp	2	0	16 <sup>3</sup>	489	Queue Per Lane (Vehicles)							
					0	0	0	0	4	89	189	249
					Exceed Storage?							
EB Diagonal On-Ramp	1	1	8	466	Queue Per Lane (Vehicles)							
					0	0	0	0	0	65	165	225
					Exceed Storage?							
WB Loop On-Ramp	1	1	27 <sup>4</sup>	146	Queue Per Lane (Vehicles)							
					0	0	0	0	0	0	0	0
					Exceed Storage?							
WB Diagonal On-Ramp	1	1	15	838	Queue Per Lane (Vehicles)							
					0	39	139	239	339	439	539	599
					Exceed Storage?							
Notes:												
1. For ramp metering queuing analysis, 1 vehicle = 30 feet.												
2. Queue length is based on SOV volume, as this is volume generates the longest (worst case) queue.												
3. Average storage per lane for two lanes, assumes 14 vehicles total (7 vehicles per lane) on the on-ramp and 18 vehicles in the right-turn lane on El Camino Real for a total of 32 vehicles.												
4. Storage length assumes 8 vehicles on on-ramp and 19 vehicles in right-turn lane on El Camino Real												
Source: Fehr & Peers, 2013.												
PM Peak Hour												
Ramp	# of SOV Lanes	# of HOV Lanes	Storage Per Lane (Vehicles)	SOV Volumes Per Lane <sup>2</sup>	Metering Rate (Vehicles Per Hour)							
					900	800	700	600	500	400	300	240
EB Loop On-Ramp	2	0	16 <sup>3</sup>	705	Queue Per Lane (Vehicles)							
					0	0	9	104	204	304	404	464
					Exceed Storage?							
EB Diagonal On-Ramp	1	1	8	742	Queue Per Lane (Vehicles)							
					0	0	42	142	242	342	442	502
					Exceed Storage?							
WB Loop On-Ramp	1	1	27 <sup>4</sup>	260	Queue Per Lane (Vehicles)							
					0	0	0	0	0	0	0	19
					Exceed Storage?							
WB Diagonal On-Ramp	1	1	15	662	Queue Per Lane (Vehicles)							
					0	0	0	62	162	262	362	422
					Exceed Storage?							
Notes: For ramp metering queuing analysis, 1 vehicle = 30 feet.												
1. For ramp metering queuing analysis, 1 vehicle = 30 feet.												
2. Queue length is based on SOV volume, as this is volume generates the longest (worst case) queue.												
3. Average storage per lane for two lanes, assumes 14 vehicles total (7 vehicles per lane) on the on-ramp and 18 vehicles in the right-turn lane on El Camino Real for a total of 32 vehicles.												
4. Storage length assumes 8 vehicles on on-ramp and 19 vehicles in right-turn lane on El Camino Real												
Source: Fehr & Peers, 2013.												

### **Avoidance, Minimization and/or Measures**

Each construction stage will attempt to maintain the existing lanes of traffic on the SR 92 overcrossing in each direction and on all on- and off-ramps from SR 92 to SR 82. Potential lane closures for this project will be made during non-peak travel periods. It is anticipated that a Transportation Management Plan (TMP) will be completed for the project which may consist of, but is not limited to, public awareness campaigns, and portable changeable message signs to detour vehicle, bicycle and pedestrian traffic for potential temporary street closures.

The Construction Impacts section of this chapter details the stage construction for the project. No other avoidance, minimization and/or mitigation measures are proposed.

## **VISUAL/AESTHETICS**

### **Regulatory Setting**

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the State “with...enjoyment of *aesthetic*, natural, scenic and historic environmental qualities” (CA Public Resources Code [PRC] Section 21001[b]).

### **Affected Environment**

Caltrans completed a Visual Impact Assessment Technical Report in June 2013. This report is available for review upon request.

The proposed project is located at the geographical center of the City of San Mateo and is highly visible to persons travelling on both SR 92 and SR 82. SR 82 is a conventional highway, with three lanes in each direction that under crosses the elevated SR 92 which has two lanes in each direction. The SR 92/82 Interchange is a high-volume traffic entry into the City of San Mateo, and it could be considered a "gateway" interchange. The interchange is adjacent to developed areas--mostly commercial and some residential. The existing undercrossing structure appears old and plain looking in visual quality, and the existing landscaping of the interchange is mature and fairly attractive visually. Some noteworthy mature plants include: oak trees, pine trees, plane trees, and acacia shrubs. It is anticipated that much of the existing landscaping will have to be removed to accommodate the interchange improvements and construction. Also, some graffiti was evident along the faces and flanks of the abutment of the undercrossing bridge structure.

The removal of some trees within the interchange, the addition of a new sound wall and four new retaining walls, and the addition of two new traffic interchanges will be the most notable visible changes to the environment from this project.

#### *Viewer Sensitivity*

*Neighbors* (people with views *to* the road) and *highway users* (people with views *from* the road) will not be affected by the proposed project. The project site will be partially visible to neighboring residents and pedestrians along adjacent streets Ivy Street and Palm Avenue, and visible to neighboring commercial users. Along Ivy Street, there are about eight residents in partial view, with a visual screen provided by existing landscape trees/shrubs. Along Palm Avenue, there are about twelve residents in partial view, also with a visual screen provided by existing landscape trees/shrubs. Resident viewers along Ivy Street and Palm Avenue will likely see only the tops of new sound walls, as the existing landscaping along the outsides of the on and off ramps blocks views to the lower portions of sound walls and other elements of the interchange.

Thus, *viewer exposure* (potential visibility) of the project for residences will be moderate, and the *viewer sensitivity* (potential reaction of visibility) will be moderate to low. It will be beneficial to preserve the existing landscaping along the outside of the ramps, so as to minimize viewer response. However, if the existing landscape screen along the outside of ramps is removed, the viewer response could become higher. Along SR 82, there are two commercial businesses in direct view of the project--Sleep Train Mattress Center at north side of project, and Hot Springs Spas at south side of project.

Existing *Neighbors* (people with views *to* the road) and *highway users* (people with views *from* the road) will not be substantially affected by the proposed project. The project site elements will be partially visible to existing neighboring single-story residents and pedestrians at adjacent streets Ivy Street and Palm Avenue and Elkhorn Court, and visible to some neighboring commercial users. Along 19th Ave./Ivy Street, there are about eight residents in partial view, with a visual screen provided by existing landscape trees/shrubs. Along Palm Avenue and 18th Ave./Ivy St., there are about twelve residents in partial view, also with a visual screen provided by existing landscape trees/shrubs. The multi-story residences at Elkhorn Ct. are currently being built. After 92/82 project completion, resident viewers along Ivy Street and Palm Avenue will likely see existing and new landscaping, and some new metal beam guard rail along the outsides of the diagonal ramps. Some residences at Elkhorn Court will likely see the backside of the new sound wall, along with new replacement landscaping. The proposed sound wall is 531 feet in length and fourteen feet in height, with purpose to block/reduce highway sounds to adjacent residences of Elkhorn Court. The photos below shows the existing conditions of the proposed sound wall location—outside of diagonal off-ramp EB 92 to SB 82. Below is a photo-simulation of the new sound wall.

**Figure 7. Existing Condition SM 92/82 undercrossing, looking south along El Camino Real (SR 82)**



**Figure 8. Existing Condition SM 92/82 undercrossing, looking north along El Camino Real (SR 82)**



**Figure 9. Existing Condition SM 92/82 undercrossing, at El Camino Real (SR 82)**



**Figure 10. Existing landscape along outside northbound SR 82 on-ramp**



Note: Landscape screens traffic to homes along 18<sup>th</sup> Avenue and Ivy Street (behind)

**Figure 11. Existing condition of proposed sound wall location—outside of diagonal off-ramp EB 92 to SB 82.**



Note: Existing landscape screens most of traffic to homes at Elkhorn Court (behind). Much of the existing roadside landscape would be removed, to accommodate the sound wall.

### **Environmental Consequences**

SR 92 and SR 82, at their interchange project location, are not designated CA State Scenic Highways. SR 92 is a two-lane, each direction, even profile freeway that traverses the project location with a concrete bridge structure and a median, situated in an east/west direction. SR 82 is a six-lane conventional highway that under crosses SR 92 in a north/south direction. The regional landscape is a transition of flat-to-gentle sloping terrain, suburban development, and adjacent rolling hills with stands of mature native oak trees and grass cover. The hills begin just to the west of the project. Land use adjacent to the interchange is suburban in character with approximately 60% commercial and 40% residential use. The project area is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance.

There are no scenic resources identified within the immediate project area. Existing trees that would be removed to construct the project are common throughout the area and do not exhibit unique characteristics of age, type, size, species, or arrangement. Existing trees that are not in locations that could be impacted from construction are to be protected.

Visual impacts are determined by assessing changes to visual resources and predicting viewer response to those changes. During construction, work crews and equipment would be visible along the roadsides and interchanges where the new interchanges, retaining walls, sound walls, and landscaping would be constructed. After construction, the new sound walls and retaining walls would be evident to those living in residences adjacent to the interchange. The loss of some trees within the interchange ramp loops would be evident to highway motorists. The impact would be low to moderate-low.

The project would not substantially affect any scenic vistas, would not substantially degrade visual character or scenic quality, would not damage or remove any identified scenic resources, and would not result in a substantial new source of light or glare.

### **Avoidance, Minimization and/or Mitigation Measures**

Avoidance or minimization measures have been identified that can lessen visual impacts caused by the proposed project. Environmental, aesthetic and architectural features shall be included in the project design. This section describes avoidance and/or minimization measures to address specific visual impacts. These will be designed and implemented with concurrence of the District Landscape Architect.

The following measures to avoid or minimize visual impacts will be incorporated into the project:

- Include architectural treatment on new retaining walls, on the exposed faces, so as to improve visual quality of the walls that face toward adjacent residents and other persons in the area immediately adjacent to the highway;
- Include architectural treatment on new sound walls, both front and back sides, to exhibit attractive pattern, color, texture, and/or architectural treatment, so as to improve visual quality of the walls that face toward motorists, adjacent residents, and pedestrians within the highway interchange area;

- Preserve as many existing trees and plants as is possible, within the interchange project limits. In particular, preserve the existing trees and shrubs that line outside ramps--eastbound on-ramp to SR 92, and northbound off-ramp to SR 82; Provide temporary fencing to protect trees and plants from potential construction impacts--equipment, personnel, and materials;
- Replace trees and plants that are removed, to accommodate construction of the project, at a density sufficient to create an equal amount of screening and green cover at maturity. Replacement highway planting, with plant establishment period, should be provided to offset visual impacts and ensure proper establishment and growth of new replacement landscape plants;
- Include dark colors and finishes for traffic signal and roadside appurtenances and fencing, etc., so as to minimize glare;
- Consider re-routing or covering existing conduits on the undercrossing bridge structure, so as to improve visual quality and offset visual impacts of the project;
- Consider installing City of San Mateo approved architectural street light standards, to match existing standards along SR 82 and areas adjacent to project limits;
- Consider installing new wall system of ivy-on-cable-grid, along face of bridge structure abutments next to pedestrian sidewalks, so as to improve visual quality and prevent graffiti.

## **CULTURAL RESOURCES**

### **Regulatory Setting**

“Cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, a Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327). Historical resources are considered under the CEQA, as well as CA Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

### **Affected Environment**

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Emily Darko at Caltrans, District 4 Office of Cultural Resource Studies so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

## **Environmental Consequences**

Caltrans, in consultation with the State Historic Preservation Officer (SHPO), has determined that a Finding of No Historic Properties Affected is in compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal-Aid Highway Program in California (PA).

## **Avoidance, Minimization and/or Mitigation Measures**

No avoidance, minimization and/or mitigation/compensation measures are proposed.

## PHYSICAL ENVIRONMENT

### WATER QUALITY: HYDROLOGY, FLOODPLAIN AND STORMWATER RUNOFF

#### Regulatory Setting

##### *Hydrology and Floodplains:*

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

##### *State Requirements: Porter-Cologne Water Quality Control Act:*

California’s Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a “Report of Waste Discharge” for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of “waste” as defined and this definition is broader than the CWA definition of “pollutant”. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria

necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards:

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQB's are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollution Discharge Elimination System (NPDES) Program:

#### Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an MS4 as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water." The SWRCB has identified Caltrans as an owner/operator of an MS4 pursuant to federal regulations. Caltrans' MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit, under revision at the time of this update, contains three basic requirements:

1. Caltrans must comply with the requirements of the General Construction Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices (BMPs). The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

#### *Construction General Permit*

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with Caltrans's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

#### *Section 401 Permitting*

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are

obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

## **Affected Environment**

### *Hydrology & Groundwater*

The project is located within San Francisco Bay Regional Water Quality Control Board (RWQCB or Region) and Hydrologic Sub-Area of 204.40 in San Mateo Bayside Hydrologic Area of South Bay Hydrologic Unit with average annual rainfall of 21.8 inches (Water Quality Planning Tool 2012).

The project site is within Santa Mateo Subbasin of Santa Clara Valley Groundwater Basin (Basin ID: 2-9.03) (Groundwater Bulletin 118 2003). The San Mateo Subbasin occupies a structural trough, sub-parallel to the northwest trending Coast Ranges, at the southwest end of San Francisco Bay. San Francisco Bay constitutes its eastern boundary.

### *Receiving Water Bodies*

The indirect receiving water body of the project is the Marina Lagoon located about 1.5 mile east of the project limits and the lagoon eventually discharges to San Francisco Bay (Central).

The project is within the area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods (FEMA 2012), as seen in Figure 22.

**Figure 12. Flood Insurance Rate Map**



The Marina Lagoon is on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments (SWRCB 2010) for Coliform Bacteria; whereas, the San Francisco Bay (Central) is on the 303(d) list for Chlordane, DDT, Dieldrin, Dioxin Compounds, Exotic Species, Furan Compounds, Mercury, PCBs (Polychlorinated biphenyls), PCBs (dioxin-like), and Selenium as the pollutant of concern. All the listed pollutants are on the Total Maximum Daily Load (TMDL) required list, except Mercury being addressed by USEPA approved TMDL.

The Water Quality Control Plan (Basin Plan) of the RWQCB designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater (SF Bay RWQCB 2011). The designated beneficial uses for the Marina Lagoon include estuarine habitat, wildlife habitat, water contact recreation,

and non-contact water recreation. On the other hand, the San Francisco Bay (Central) has beneficial uses for industrial service supply, industrial process supply, ocean, commercial, and sport fishing; shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, spawning, reproduction, and/or early development, wildlife habitat, water contact recreation, non-contact water recreation, and navigation.

In addition, the San Mateo Subbasin (groundwater) has beneficial uses for municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply (potential).

## **Environmental Consequences**

Per Caltrans Project Risk Level Determination Guidance (2010), the sediment risk factor is determined from the product of the rainfall runoff erosivity factor (R), the soil erodibility factor (K), and the length-slope factor (LS). The R factor was determined from the US EPA's "Rainfall Erosivity Factor Calculator" or Fact Sheet 3.1 to be about 80 (USEPA 2012). The K factor for the project is 0.32 and the LS factor is 0.29 according to the Geographic Information System (GIS) maps by the SWRCB or the Caltrans Stormwater Earth Map (2012) or Caltrans Statewide Webmap for Construction General Permit (2012).

The watershed erosion estimate (i.e., product of these factors =  $R \times K \times LS$ ) is 7.42 tons/acre, thus the project is classified as having a low sediment risk (i.e., less than 15 tons/acre).

The total disturbed soil area (DSA) will be approximately 12.0 acres, which includes staging areas, temporary grading, cut and fill areas, new pavement, and pavement replacement areas. The net additional impervious area will be about 4.0 acres. The existing impervious surface is about 4.7 acres.

The receiving water risk is classified as high because the San Francisco Bay has the beneficial uses of Fish Spawning, Cold Freshwater Habitat, and Fish Migration. The high receiving water risk for the entire project area is confirmed through the use of a GIS map prepared by the SWRCB.

The combined medium sediment risk and high receiving water risk results in the project being classified as "Risk Level 2."

The project does not require hydromodification mitigation since it is located within the exempt area (i.e., hardened channel) per San Mateo County's C.3 Stormwater Technical Guidance (2012).

The project is not anticipated to require a 401 Certification from the RWQCB since there is currently no need for a 404 permit from U.S. Army Corps of Engineers (USACE). A 404 permit will be required when a project involves dredging or fill to the Waters of the U.S.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Plan (FIRM) show that the majority of residential development and properties are not within the boundaries of the base floodplain. For more detail The Technical Information for Location Hydraulic Study and Floodplain Evaluation Summary is available.

There are currently no negotiated understandings or agreements with RWQCB pertaining to this project.

### **Avoidance, Minimization and/or Mitigation Measures**

The project would incorporate the use of temporary construction site Best Management Practices (BMPs) and permanent erosion control BMPs, which are summarized in this report, Storm Water Pollution Prevention Plan (SWPPP), and contract plans and specifications.

This project will involve construction over a period of one rainy season. The number of rainy seasons is factored into the cost estimate for each construction site BMP chosen as a line item of work. Whenever possible, earth-disturbing construction activities would be scheduled outside of an anticipated rain event. DSAs would be protected in accordance with the project's pollution control measures specified in this report and per the contract plans and specifications. The construction site BMP strategy for this project shall consist of: Soil Stabilization, Sediment Control, Tracking Control, Wind Erosion Control, Non-Stormwater Controls and Waste Management and Material Pollution Controls.

Clearing and grubbing areas would be necessary due to ramp widening. The areas to be cleared consist mostly of brush and trees. Existing vegetation will be preserved to the maximum extent practicable (MEP). Disturbed soil areas will be re-stabilized with permanent erosion control measures.

Environmentally Sensitive Areas (ESAs), the areas that should be avoided due to highly sensitive habitats, would be protected from construction activities by the placement of highly visible Temporary Fence (Type ESA).

The following soil stabilization measures are considered for this project and are included as separate bid line items in the Basic Engineering Estimating System (BEES) of this project: Temporary Cover, Temporary Hydraulic Mulch (Bonded Fiber Matrix), and Temporary Fence (Type ESA).

The temporary cover would be placed over temporary stockpiles of disturbed soil to prevent sediment runoff from wind or water. The temporary hydraulic mulch (bonded fiber matrix) would be placed on any exposed disturbed soils, stockpiles of soils, and/or unprotected slopes that may be susceptible to erosion from either runoff or wind. If there are identified ESAs within the project limits, temporary fence (Type ESA) will be designed to designate the areas as being outside the limits of work.

There will be cut/fill slopes due to widening or reconstructing of the ramps, however the cut/fill slopes will be minimized and conformed to the existing slopes.

Disturbed slopes will be planted with comparable vegetation and maintained until vegetation is well established and self-sufficient.

When possible slopes would be graded at 2:1 (horizontal:vertical or h:v) or flatter; furthermore, proposed cut and fill slopes are designed to tie into existing slopes that are also flat, which would allow for re-vegetation after construction. All projects incorporating new slopes steeper than 4:1 (h:v) must have an erosion control plan developed or approved by the District Landscape Architect. Any slopes steeper than 2:1 (h:v), a Geotechnical Design Report must be prepared by Geotechnical Services with concurrence from Maintenance.

Slopes would be protected during construction through the use of temporary construction site BMPs. Permanent erosion control would be achieved by utilizing compost incorporate and applying erosion control (hydroseeding) on disturbed slopes 4:1 (h:v) or flatter (including biofiltration strip areas), as well as placing rolled erosion control product (netting) and erosion control (hydroseeding) on disturbed slopes between 4:1 (h:v) and 2:1 (h:v).

Permanent fiber rolls would be placed on proposed slopes and on slopes with existing erosion control concerns. The erosion control measures proposed for the project would be shown on Erosion Control Plans.

Some drainage systems including inlets will be relocated as a result of the ramp widening and will be shown on Drainage Plans at a later phase.

The following sediment control measures are considered for this project and would be included as separate bid line items: Temporary Fiber Rolls, Temporary Silt Fence, and Temporary Drainage Inlet Protection.

Temporary fiber rolls would be placed in areas where there is potential for sediment to run on or off the project site; this includes placing temporary fiber rolls at the top of cut and fill slopes.

Temporary silt fence would be located along the R/W to prevent sediment from running off the project site. Temporary silt fence would also be placed around all temporary stockpiles to prevent sediment runoff. During construction, temporary silt fences would be placed around existing and proposed treatment BMPs to protect them from being impacted by sediment and construction-related activities.

Temporary drainage inlet protection would be placed at all existing and proposed inlet locations to protect inlets from sediment or other construction-related pollutant runoff.

Risk Level 2 projects are required to prepare an SWPPP developed and certified by a Qualified SWPPP Developer (QSD) prior to the start of construction. The SWPPP will identify BMPs to reduce water quality impacts during construction. The SWPPP should emphasize: 1) standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas; 2) personnel training; 3) scheduling and implementation of BMPs year-round and throughout the various construction phases; 4) identification of BMPs for non-stormwater discharge such as fuel spills; and 5) mitigation and monitoring throughout the construction period.

The SWPPP also requires the QSD to develop a Construction Site Monitoring Program (CSMP) prior to the start of construction, which will be revised to meet ongoing construction activities. For Risk Level 2, the CSMP is required to include the procedures and methods related to the visual monitoring and sampling and analysis plans for non-visible pollutants, sediment and turbidity, and pH. Actual in-field work to comply with the requirements of monitoring, sampling and analysis is to be done by a QSD or Qualified SWPPP Practitioner (QSP).

Risk Level 2 projects are required to prepare a Rain Event Action Plan (REAP). A REAP is required to be prepared 48 hours prior to any likely rain event; a likely rain event is described as, "any weather pattern that is forecast to have a 50% or greater probability of producing precipitation," as determined by the National Oceanic and Atmospheric Administration (CGP 2009). The REAP will be prepared at every phase of construction and for both active and inactive construction areas. The REAP will specify the project location, plus identify the storm water manager, erosion control provider and sampling personnel with emergency contact information. The REAP will also present the current construction activity and strategy or actions to be taken for the implementation of BMPs on the project site.

The project is required to perform storm water sampling at all discharge locations. Exact sampling and discharge locations will be finalized at a later phase.

This project does require stenciling on existing or proposed drain inlets because pedestrian or bicycle traffic is allowed within the project limits.

## **GEOLOGY/ SOILS/SEISMIC/TOPOGRAPHY**

### **Regulatory Setting**

Topographic and geologic features are also protected under the CEQA. This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Department's Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see Caltrans's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

### **Affected Environment**

A Preliminary Geotechnical Report was completed for the proposed project on December 18, 2012.

The proposed project is located on the edge on the eastern side of the Santa Cruz Mountains, at the junction between the hills and the flat land of the alluvial planes of the San Francisco Bay. The site is approximately 2.25 miles east of Buri Buri Ridge (634 feet mean sea level (msl)) and Pulgas Ridge. These ridges are separated by San Mateo Creek, the closest named creek, at 1.25 miles northwest of the proposed project site. This creek drains from Crystal Springs dam, northeast, to San Francisco Bay. The closest body of water is an unnamed canal which is approximately 1,500 feet southwest of the site. This canal drains to Seal Slough and then drains to the San Francisco Bay.

The project site is located within the California Coast Ranges geomorphic province. Extensive folding has created a series of northwest trending ranges and valleys, one of which is the San Francisco Bay. SR 92/82 separation is located on historic artificial fill deposits and Holocene alluvial fan and fluvial deposits.<sup>2</sup> The artificial fill, which is located at the elevated section of the separation, is

*"...loose to very well consolidated gravel, sand, silt, clay, rock fragments, organic matter, and man-made debris in various combinations. Thickness is variable and may exceed 30 m in places. Some is compacted and quite firm, but fill made before 1965 is nearly everywhere not compacted and consists simply of dumped materials."<sup>3</sup>  
The flat lying areas are composed of Holocene alluvial fan and fluvial deposits "...alluvial fan deposits are brown or tan, medium dense to*

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<sup>2</sup> USGS. Geology of the Onshore Part of San Mateo County CA: Derived from the Digital Database Open\_file 98-137; Brabb, E.E., Graymer, R.W., Jones, D.L. 1998

<sup>3</sup> *ibid*

*dense, gravely sand or sandy gravel that generally grades upward to sandy or silty clay.”<sup>4</sup>*

The Log of Test Borings (LOTBs) from the 1961 construction of the Route 92/82 Separation show silty clays, sandy silty clay, sandy clayey silt, silty sand, clayey sand, clayey gravelly sand, sand and gravelly sand. These findings are consistent with the USGS map showing Holocene artificial fill, alluvial fan and fluvial deposits.

The majority of the project is underlain by soil classified as urban land. This soil is classified with Hydraulic Soil D. “...Group D - Soils in this group have high runoff potential when thoroughly wet.”<sup>5</sup> Since the soil is classified as Urban Land many classification, such as shrink swell and erodibility, have not been rated. (The USDA, NRCS; Custom Soil Resource Report for Sonoma County, California; 2012 can be supplied upon request.)

The proposed project site is located within a seismic region dominated by the northwest trending San Andreas Fault. While the San Andreas is the controlling fault for the proposed project site, there are four faults within 15 miles of project site and they are presented Table 22, with fault locations.

**Table 22. Earthquake Fault Data**

<b>Fault Name</b>	<b>Distance: Miles</b>	<b>Fault ID:</b>	<b>Fault Type:</b>	<b>Maximum Magnitude (MMax):</b>
<b>San Andreas fault zone (Peninsula section)</b>	3.4	309	Right Lateral Strike Slip	7.9
<b>San Gregorio fault zone (San Gregorio section)</b>	10.5	197	Right Lateral Strike Slip	7.0
<b>Silver Creek fault</b>	12.6	152	Thrust Fault	7.1
<b>Hayward fault zone (Southern Hayward section)</b>	15.1	354	Right Lateral Strike Slip	7.3

Groundwater in the area has not been monitored by Caltrans. Geotechnical borings that were advanced in January 1959 measured groundwater at an elevation between -2.3 and 5.3 feet (12 and 21 feet below surface grade). Groundwater levels fluctuate seasonally and are typically highest in the winter season.

<sup>4</sup> ibid

<sup>5</sup> Ibid

The proposed project is located on relatively flat land, therefore landslides and erosion by water are not an issue.

## **Environmental Consequences**

### *Seismicity*

Potential seismic hazards in such an active region are minimal due to the proposed project's location. According to the Alquist-Priolo Earthquake Fault Zone Maps, there are no faults within the limits of the project site, so surface rupture is not an issue.

### *Groundwater*

Groundwater in the area has not been monitored by Caltrans; geotechnical borings will provide measurements at a later date.

### *Erosion and Slope Stability*

As noted previously, the susceptibility of a soil to sheet and erosion by water is not an issue.

### *Excavation Characteristics*

No excavations are planned for the proposed project. Retaining walls could be up to 300 feet in length reaching a maximum height of 15 feet. Since the deposits below the project site are Holocene and artificial fill, drilling piles should be feasible.

## **Avoidance, Minimization and/or Mitigation Measures**

In accordance with standard Caltrans requirements, detailed geotechnical studies shall be conducted during the proposed project's future plans, specifications, and estimates (PS&E) phase. BMPs for erosion and sediment control are noted in the Water Quality section of this chapter.

## **PALEONTOLOGY**

### **Regulatory Setting**

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects. 23 Code of Federal Regulations (CFR) 1.9(a) states that the use of federal funds must be in conformity with federal and state law. Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

### **Affected Environment**

A Paleontological Identification Report (PIR) was prepared on December 17, 2012. The proposed project site is located within the California Coastal Range geomorphic province on historic artificial fill deposits and Holocene alluvial fan and fluvial deposits. These Holocene deposits could overlay Pleistocene alluvial fan and fluvial deposits, which contain fresh water mollusks and extinct late Pleistocene vertebrate fossils.

A literature review and online fossil locality search were conducted for San Mateo County using the Berkeley Natural History Museum (BNHM) online database and the UC Paleontology Museum Database (UCMP). The BNHM listed over 8,607 exhibits categorized by biological classification. However it is more useful to use the UCMP Database, which lists fossils by their epoch. Over 392 fossils were found in San Mateo County, the majority not within close proximity to the project from the Holocene epoch. Ten (10) of the fossils listed are from the Pleistocene.

No specific fossil bearing formations are located in the project vicinity.

### **Environmental Consequences**

Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impact previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. This can result in impacts to fossils by destroying them or otherwise altering them in such a way that their scientific value is lost. But since the deposits at the job site are either man made or from the Holocene epoch, and construction methods are not to extend into the Pleistocene deposits, fossil findings are not expected.

### **Avoidance and/or Minimization Measures**

In general, avoidance and minimization measures are not feasible with regard to addressing impacts on paleontological resources. Since the project vicinity is considered to have no potential for yielding fossils, no measures are recommended.

## HAZARDOUS WASTE/MATERIALS

### Regulatory Setting

The California Health and Safety Code Section 25501(o) define *hazardous material* as:

...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous materials and hazardous wastes are regulated by state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use. The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as "Superfund," is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides "cradle to grave" regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code Section 25501(o)

### **Affected Environment**

A number of resources were consulted in order to identify existing locations and types of hazardous materials within the study area. These included review of historical aerial photographs; review of available regulatory information to identify possible past or present environmental violations or problems; agency records search to identify California-certified hazardous waste sites; agency records search to identify business types likely to store, transfer or use large quantities of hazardous materials; a variance from the Department of Toxic Substance Control Lead Contaminated Soils dated September 22, 2000; and field reconnaissance on September 5, 2012.

### **Environmental Consequences**

An environmental regulatory database search revealed that there are two underground storage tank sites close to the project limits that might negatively impact the proposed project. The excavation for the projects proposed retaining wall might be affected by one of these two sites depending on the wall's final design details.

Based upon the wall design and the project's estimated soil excavation quantity, a subsurface investigation (SI) may necessary for the project. This field work will be planned and executed during the design phase, when the project footprint and potential impacts are better defined.

### **Avoidance, Minimization, and/or Mitigation Measures**

Based on the history of the project area, there is potential aerial lead contamination due to the aerial deposition of lead from motor vehicle exhaust. Testing will be done during the design phase upon request from the Project Engineer. If test results reveal the soils are contaminated, the materials must be handled according to regulatory requirements. The special handling may include implementing a health and safety plan, and reusing the material according to the Department of Toxic Substance Control Lead Contaminated Soils variance dated September 22, 2000, or it may require off-site disposal of the materials.

## NOISE

Noise is defined as unwanted sound. A number of factors affect sound perceived by the human ear, including the level of sound, the frequencies involved, the period of exposure, and changes or fluctuations in the noise levels during exposure. Levels of sound are measured in terms of decibels (dB). Since the human ear cannot perceive all frequencies equally well, measured sound levels are often adjusted, or weighted, to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA.

Sound in our daily environment fluctuates over time. One way of describing fluctuating sound over a specific time period is to present the changing levels of sound as if it had been at a steady unchanging level for the time period. A descriptor called the equivalent sound level,  $Leq$ , is used to represent a constant level of sound that contains the same amount of acoustical energy as a fluctuating sound would generate in a given time period. Since highway traffic noise impacts are evaluated by using the average noise levels at sensitive receivers during the worst, or the noisiest, one hour period of the day, the sound level equivalents of the acoustical energy received in one hour is the descriptor used for this purpose, which is represented as  $Leq(h)$ .

Decibels are logarithmic units. A doubling of the number of noise sources, such as cars on a roadway, increases the noise levels by 3 dBA. A ten-fold increase in the number of noise sources adds 10 dBA to the noise levels. For every doubling of distance between the noise source and the receptor, traffic noise would decrease by 3 dBA over hard ground (paved surface) or 4.5 dBA over soft ground (vegetated or plowed soil). Furthermore, with normal human hearing, an increase of 10 dBA in sound levels is perceived as twice as loud, while a change of 3 dBA is barely perceivable.

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the NEPA-23 Code of Federal Regulations (CFR) 772 noise analysis; please see Chapter 4 of this document for further information on noise analysis under CEQA.

For highway transportation projects with FHWA (and Caltrans, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the

NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

Table 23 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

**Table 23. Noise Abatement Criteria**

<b>Table 23: Noise Abatement Criteria</b>		
<b>Activity Category</b>	<b>NAC, Hourly A-Weighted Noise Level, Leq(h)</b>	<b>Description of activity category</b>
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B <sup>1</sup>	67 (Exterior)	Residential.
C <sup>1</sup>	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.

E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC— reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC— reporting only	Undeveloped lands that are not permitted.
<sup>1</sup> Includes undeveloped lands permitted for this activity category.		

|

**Figure 13. Noise Levels of Common Activities**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

In accordance with Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 dBA in the future noise level must be achieved for an abatement measure to be considered feasible. Other

considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents acceptance and the cost per benefited residence.

Caltrans Highway Design Manual (HDM) Chapter 1100 – Highway Traffic Noise Abatement defines general requirements and design criteria for noise abatement measures for highway projects in California. Where feasible, a sound wall should break the line of sight between a receptor 5 feet above ground and the exhaust stack of a truck, assumed to be 11.5 feet above the pavement. The minimum height of noise barriers is 6 feet. Noise barriers should not exceed 14 feet in height when located 15 feet or less from the edge of the traveled way. Barriers with heights greater than 16 feet may be considered if necessary to achieve acoustical feasibility (i.e., at least 5 dBA of noise reduction) or cost reasonableness (i.e., calculated allowance exceeds estimated cost).

### *Noise Impact*

Predicted exterior traffic noise levels at land uses in Activity Categories A, B, C and E are evaluated to determine whether traffic noise impacts are predicted to occur. Traffic noise impacts occur when future predicted noise levels in the design year with the project in place either 1) show a *substantial* increase (12 dBA or higher) from the existing levels, or 2) approach or exceed the NAC established by the FHWA as shown in Table 25. The term 'approach' is defined by Caltrans as within one dBA of the NAC. For example, a residence with predicted future exterior noise levels of 66 dBA Leq(h) or higher would qualify for consideration of noise abatement. In determining noise impacts, primary consideration is given to exterior areas where frequent human use occurs that would benefit from a lowered noise level. In general, an area of frequent human use is an area where people are exposed to traffic noise for an extended period of time on a regular basis. Noise abatement or mitigation measures must be considered for Type I projects when a noise impact is identified.

A Type 1 project as defined in 23 CFR 772, is a federal or federal-aid project for construction of highway on a new location; or physical alteration of vertical or horizontal alignment of an existing highway; or adding additional through-traffic lanes.

### *Feasibility*

The feasibility of a noise abatement measure is an engineering consideration. Noise abatement must reduce noise at least 5 dBA to be considered feasible from an acoustical perspective. Noise abatement measures that provide noise reduction of more than 5 dBA are encouraged as long as they meet the reasonableness guidelines. Feasibility may also be restricted by various factors, including topography, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and safety considerations.

### *Reasonableness*

The determination of the reasonableness of noise abatement is more subjective than the determination of its feasibility. The overall reasonableness of noise abatement is determined by the following three factors: the cost of noise abatement, the 7 dBA noise reduction design goal and the viewpoints of benefited receptors (including property owners and residents of the benefited receptors). Cost considerations for determining noise abatement reasonableness are evaluated by comparing reasonableness allowances and projected abatement costs.

23CFR772 lists optional reasonableness factors that may be considered. However the noise abatement recommendations presented in the draft environmental documentation are based on the three factors listed above. The additional factors are considered through the remainder of the environmental review process. The Project Development Team will make the proposed noise abatement decisions that will be incorporated into the final environmental documentation. Any proposed changes to the noise abatement decision subsequent to adoption of the final environmental document should be reviewed with the District noise specialists to insure adequate acoustic performance.

### *Undeveloped Lands*

When traffic noise impacts are predicted for undeveloped lands for which a noise-sensitive development has received final approval from a local jurisdiction before the date of public knowledge of the transportation project, noise abatement must be considered as part of the transportation project. Otherwise, noise abatements should be the responsibility of the local agencies or private developers. The issuance of a building permit is generally considered to be the final approval of a development. The date of public knowledge shall be the date of approval of the final environmental decision document (e.g. a Record of Decision).

## **Affected Environment**

The study area is the area bounded by the limits of the proposed project. Land uses in Activity Categories B, C and E as defined in 23 CFR 772 are present in the study area. There are no undeveloped lands in the area. The existing worst-hour noise levels were calculated based on the TNM model using the traffic volumes that would yield the highest noise levels

The area in the northeast quadrant of the interchange is mainly residential (Activity Categories B), except for a row of commercial properties (Activity Categories E) along SR 82. There are no outdoor areas within the commercial properties that are considered frequent human use areas. Existing noise levels (Leq) range from 58 to 65 dBA for residences in the area, represented by R3, R4, R7, R8 and R10.

The southeast quadrant has residences (Activity Categories B), commercial properties (Activity Categories E) along SR 82, two baseball fields (Activity

Categories C) and a playground (Activity Categories C) in Trinta Park. There are no outdoor areas that are considered frequent human use areas within the commercial properties along SR 82. Existing worst-hour noise levels were calculated to be 64 dBA for the area's residences, represented by R1, R5, R6 and R9. The existing noise level at the fence of the baseball field (R2), where the highest traffic noise is expected to occur in Trinta Park, is calculated to be 65 dBA.

The northwest quadrant of the interchange has a commercial development (Activity Categories E) with no frequent human use area in its exterior. The existing noise level is calculated to be 76 dBA at Receptor R11, which represents a loading area in the Borel Square Shopping Center where the highest noise level is expected to occur for the entire area.

The southwest quadrant is a mixed-use commercial/residential area that currently has a commercial development (Activity Categories E), a day care center (Activity Categories C) and a meeting venue (Activity Categories C). The outdoor play yard (R12) in the day care center at #1911 Elkhorn Court (EC) is considered an area of frequent human use. The existing worst-hour noise level is calculated to be 63 dBA at Receptor R12.

The southwest quadrant also has an unfinished multi-story apartment building (Activity Categories B) on Elkhorn Court that is presently under construction. The exterior patios on some of the apartment units are considered frequent human use areas. Since the building is currently unoccupied, they were only analyzed under the project's future conditions.

The existing worst-hour noise levels calculated by TNM are summarized in Table 24.

**Table 24. Existing Noise Levels**

Receptor No.	Location	Type of Use	Units Represented	Activity Category (NAC)	Existing Noise Level, Leq(h)
R1	#96 19th Ave	Residential	2	B (67)	64
R2	Trinta Park (Baseball Field)	Sport/ Recreation	2	C (67)	65
R3	#1811 Gum St	Residential	3	B (67)	62
R4	#1814 Palm Ave	Residential	1	B (67)	58
R5	#1911 Ivy St.	Residential	2	B (67)	64
R6	#106 19th Ave	Residential	1	B (67)	64
R7	#1819 Palm Ave	Residential	2	B (67)	61
R8	#1815 Palm Ave	Residential	2	B (67)	60
R9	#1922 Ivy St.	Residential	2	B (67)	64
R10	#1747 Ivy St.	Residential	2	B (67)	65
R11	51 Bovet Road (Borel Square SC)	Commercial	0*	E (72)	76
R12	#1911 Elkhorn Ct	Day Care Ctr.	1	C (67)	63
Note * No frequent human use area					

### Environmental Consequences

Under the project's Build Alternative, the future noise levels for receptors in the northeast and southeast quadrants of the interchange are predicted to range from 58 to 65 dBA in the design year, which would not approach or exceed the NAC. In addition, the future noise levels at these receptors would not increase substantially (12 dBA or higher) from the existing levels. The Build Alternative would not cause noise impacts to receptors in the northeast and southeast quadrants.

The future noise levels at the exterior patios of the apartment building that is currently under construction are predicted to range from 67 to 76 dBA in the design year, which exceed the NAC for Activity Category B. Noise impacts are identified at

a total of 26 units where the future noise levels would reach 66 dBA or higher. The locations where future noise levels would reach 66 dBA or higher are shaded in Table 25 below.

The locations of the exterior patios are determined based on construction plans submitted to the City of San Mateo. Depending on its location, each receptor in the area may represent a single patio or a group of neighboring patios. There are also provisional receptors that do not represent any frequent human use areas based on the construction plans. They were analyzed in the event that the actual locations of the patios upon completion deviate from the plans. Noise impacts are not assessed at the provisional receptors.

**Table 25. Future Noise Levels and Noise Impacts**

Receptor No.	Location	Units Represented	Existing Noise Levels, dBA	Future Noise Levels, dBA		Activity Category (NAC)	Impact
				No-Build	Build		
R1	#96 19th Ave	2	64	64	64	B (67)	None
R2	Trinta Park	2	65	65	64	C (67)	None
R3	#1811 Gum St	3	62	62	62	B (67)	None
R4	#1814 Palm Ave	1	58	59	58	B (67)	None
R5	#1911 Ivy St.	2	64	64	64	B (67)	None
R6	#106 19th Ave	1	64	65	64	B (67)	None
R7	#1819 Palm Ave	2	61	61	61	B (67)	None
R8	#1815 Palm Ave	2	60	60	60	B (67)	None
R9	#1922 Ivy St.	2	64	65	65	B (67)	None
R10	#1747 Ivy St.	2	65	65	64	B (67)	None
R11	51 Bovet Road (Borel Square SC)	0*	76	76	76	E (72)	None
R12	#1911 Elkhorn Court (EC)	1	63	62	61	C (67)	None
R13	EC Apt N1 Ground	0*	-	71	71	B (67)	None
R14	EC Apt N1 Level 2	1	-	76	<b>76</b>	B (67)	Yes

Recept or No.	Location	Units Represented	Existing Noise Levels, dBA	Future Noise Levels, dBA		Activity Category (NAC)	Impact
				No-Build	Build		
R15	EC Apt N1 Level 3	2	-	76	<b>76</b>	B (67)	Yes
R16	EC Apt N1 Level 4	2	-	76	<b>76</b>	B (67)	Yes
R17	EC Apt N2 Ground	0*	-	71	70	B (67)	None
R18	EC Apt N2 Level 2	2	-	76	<b>76</b>	B (67)	Yes
R19	EC Apt N2 Level 3	3	-	76	<b>76</b>	B (67)	Yes
R20	EC Apt N2 Level 4	2	-	76	<b>76</b>	B (67)	Yes
R21	EC Apt N3 Ground	0*	-	69	69	B (67)	None
R22	EC Apt N3 Level 2	0*	-	74	74	B (67)	None
R23	EC Apt N3 Level 3	4	-	74	<b>74</b>	B (67)	Yes
R24	EC Apt N3 Level 4	2	-	74	<b>74</b>	B (67)	Yes
R25	EC Apt E1 Ground	0*	-	67	67	B (67)	None
R26	EC Apt E1 Level 2	0*	-	71	71	B (67)	None
R27	EC Apt E1 Level 3	1	-	71	<b>71</b>	B (67)	Yes
R28	EC Apt E1 Level 4	0*	-	71	71	B (67)	None
R29	EC Apt E2 Ground	0*	-	66	66	B (67)	None
R30	EC Apt E2 Level 2	1	-	69	<b>69</b>	B (67)	Yes
R31	EC Apt E2 Level 3	1	-	70	<b>70</b>	B (67)	Yes
R32	EC Apt E2 Level 4	0*	-	70	70	B (67)	None
R33	EC Apt W1 Ground	0*	-	68	67	B (67)	None
R34	EC Apt W1 Level 2	0*	-	72	72	B (67)	None
R35	EC Apt W1 Level 3	1	-	72	<b>72</b>	B (67)	Yes
R36	EC Apt W1 Level 4	0*	-	72	72	B (67)	None
R37	EC Apt W2 Ground	0*	-	67	67	B (67)	None
R38	EC Apt W2 Level 2	2	-	71	<b>71</b>	B (67)	Yes

Recept or No.	Location	Units Represented	Existing Noise Levels, dBA	Future Noise Levels, dBA		Activity Category (NAC)	Impact
				No-Build	Build		
R39	EC Apt W2 Level 3	2	-	71	<b>71</b>	B (67)	Yes
R40	EC Apt W2 Level 4	0*	-	71	71	B (67)	None

Notes: \* No frequent human use area

**Bold** letters denote noise levels at impacted receptors

**Shaded** rows denote locations where future noise levels would reach 66 dBA or higher

Since the freeway is currently operating at its peak noise generating level (Level of Service C) during the peak periods, future noise levels with the No-Build Alternative would not significantly change from the existing worst-hour levels. Under the No-Build Alternative, the predicted future noise levels would remain unchanged or increase by 1 dBA above the existing levels at receptors in the project area. The exterior patios of the apartment building that is currently under construction in the southwest quadrant are considered frequent human use areas in this study.

### **Avoidance, Minimization and/or Abatement Measures**

In the southwest area of the proposed new interchange (see Figure 14), the future noise levels at the exterior patios of 26 units of the future Elkhorn Court apartment building, currently under construction, are predicted to range from 67 to 76 dBA in the design year. This dBA would exceed the NAC (66 dBA or higher) for Activity Category B. This is considered an adverse noise impact to the 26 units of Elkhorn Court that are currently under construction. The proposed abatement measure for the noise impact to the 26 units is a 536 foot (ft) sound wall. Noise abatement in the form of a soundwall was analyzed. Below is an aerial photo showing the approximate location of the proposed soundwall.

**Figure 14. Location of Proposed Soundwall**



*Source: Google Earth, based on USGS imagery, 12/31/2010.*

A 536 foot long soundwall, SW-1, along the edge of shoulder of the proposed off-ramp is found to be feasible, as it would reduce the future noise levels by more than 5 dBA. The soundwall would meet the 7 dBA noise reduction goal in the reasonableness consideration at the minimum height of 10 feet. At the height of 14 feet, SW-1 would break the line-of-sight between truck stacks and the receptors on the second level of the apartment building, but not be able to do so for receptors on higher levels. The number of benefited receptors would vary depending on the height of the barrier selected. Benefited receptors are those predicted to receive at least a 5 dBA noise reduction from the proposed abatement measure. Units on the third and fourth levels of the building would not be benefited at any barrier heights. Please see Visual/Aesthetics section for additional photos.

**Figure 15. Simulated Image of Proposed Soundwall on EB 92**



*Photo simulation of proposed new 536' soundwall at location—outside of diagonal off-ramp EB 92 to SB 82. Much of the existing roadside landscape would be removed to accommodate the soundwall.*

Table 26 below shows the predicted future noise levels and insertion losses (I.L.) with soundwall SW-1 at various wall heights.

**Table 26. Future Noise Levels with Barrier**

Receptors No.	Location	Units Represented	Future Noise Levels, dBA												
			No Barrier		6 FT Barrier			8 FT Barrier		10 FT Barrier		12 FT Barrier		14 FT Barrier	
			Leq	I.L.	Leq	I.L.	Leq	I.L.	Leq	I.L.	Leq	I.L.	Leq	I.L.	
R13	Apt N1 Ground	0*	71	67	4	66	5	65	6	65	6	65	6		
R14	Apt N1 Level 2	1	76	73	3	71	<b>5</b>	70	<b>6</b>	69	<b>7</b>	69	<b>7</b>		
R15	Apt N1 Level 3	2	76	76	0	76	0	75	1	73	3	71	<b>5</b>		
R16	Apt N1 Level 4	2	76	76	0	76	0	76	0	76	0	75	1		
R17	Apt N2 Ground	0*	71	66	5	65	6	64	7	63	8	63	8		
R18	Apt N2 Level 2	2	76	73	3	70	<b>6</b>	68	<b>8</b>	67	<b>9</b>	66	<b>10</b>		

Receptors No.	Location	Units Represented	Future Noise Levels, dBA										
			No Barrier	6 FT Barrier		8 FT Barrier		10 FT Barrier		12 FT Barrier		14 FT Barrier	
			Leq	Leq	I. L.	Leq	I.L.	Leq	I.L.	Leq	I.L.	Leq	I.L.
R19	Apt N2 Level 3	3	76	76	0	76	0	75	1	73	3	71	<b>5</b>
R20	Apt N2 Level 4	2	76	76	0	76	0	76	0	75	1	75	1
R21	Apt N3 Ground	0*	69	64	5	63	6	62	7	61	8	60	9
R22	Apt N3 Level 2	0*	74	72	2	69	5	66	8	64	10	63	11
R23	Apt N3 Level 3	4	74	74	0	74	0	73	1	72	2	70	4
R24	Apt N3 Level 4	2	74	74	0	74	0	74	0	74	0	74	0
R25	Apt E1 Ground	0*	67	62	5	62	5	61	6	60	7	60	7
R26	Apt E1 Level 2	0*	71	70	1	68	3	66	5	64	7	63	8
R27	Apt E1 Level 3	1	71	71	0	71	0	71	0	70	1	69	2
R28	Apt E1 Level 4	0*	71	71	0	71	0	71	0	71	0	71	0
R29	Apt E2 Ground	0*	66	62	4	62	4	61	5	60	6	60	6
R30	Apt E2 Level 2	1	69	69	0	68	1	66	3	64	<b>5</b>	63	<b>6</b>
R31	Apt E2 Level 3	1	70	70	0	70	0	70	0	69	1	68	2
R32	Apt E2 Level 4	0*	70	70	0	70	0	70	0	70	0	70	0
R33	Apt W1 Ground	0*	68	66	2	65	3	65	3	65	3	65	3
R34	Apt W1 Level 2	0*	72	70	2	70	2	70	2	69	3	69	3
R35	Apt W1 Level 3	1	72	72	0	71	1	70	2	70	2	70	2
R36	Apt W1 Level 4	0*	72	72	0	72	0	72	0	71	1	70	2
R37	Apt W2 Ground	0*	67	65	2	65	2	65	2	65	2	65	2
R38	Apt W2 Level 2	2	71	70	1	69	2	69	2	69	2	69	2
R39	Apt W2 Level 3	2	71	71	0	70	1	70	1	69	2	69	2
R40	Apt W2 Level 4	0*	71	71	0	71	0	71	0	70	1	70	1

Notes: \* No frequent human use area

Receptors No.	Location	Units Represented	Future Noise Levels, dBA											
			No Barrier		6 FT Barrier		8 FT Barrier		10 FT Barrier		12 FT Barrier		14 FT Barrier	
			Leq	I. L.	Leq	I. L.	Leq	I. L.	Leq	I. L.	Leq	I. L.	Leq	I. L.
<b>Bold</b> letters denote 5 dBA or more noise reduction														

Cost consideration in determining the reasonableness of noise abatement is evaluated by comparing the reasonable allowance with the projected construction cost of the abatement. The reasonable allowances for SW-1 are calculated based on the 2011 allowance of \$55,000 per benefited receptor.

**Table 27. Barrier Feasibility and Reasonable Allowances**

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Design Goal Achieved ?	Reasonable Allowance per Residence	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
SW-1	10	Yes	3	No	3	\$165,000	\$255,000	No
	12	Yes	4	No	4	\$220,000	\$305,000	No
	14	Yes	9	Yes	9	\$495,000	\$356,000	Yes

The engineer's cost estimate includes costs required to construct the abatement. Wall construction cost is based on masonry construction, in accordance with Caltrans' standard specifications. The cost calculations of the noise abatement measure includes all items appropriate and necessary for the construction of the noise abatement measure and only those items directly related to the construction of the noise abatement have been included in the noise abatement construction estimate. These items include the following: mason blocks, excavation, backfill, concrete barrier, traffic control and landscape. The site conditions require modification of a planned retaining wall for the proposed noise barrier foundation and the cost of related modifications (additional reinforcement) is included in the construction cost estimate.

## **Preliminary Noise Abatement Decision**

The 14-foot high masonry soundwall is recommended for construction for the following reasons:

- It is the only barrier that costs less than the allowance.
- It breaks the line-of-sight break between a receptor and an 11.5-foot-high truck stack (per Chapter 1100 of the Highway Design Manual),
- Has the maximum number of benefited receptors which in this case is 9.
- Provides a maximum of 10 dBA of noise reduction with minimal increase in cost
- Meets the 15-year minimum life cycle as there is no planned future construction at this ramp.

The preliminary noise abatement decision presented here is based on preliminary project alignments and profiles, which may be subject to change. As such, the physical characteristics of noise abatement described herein also may be subject to change. If pertinent parameters change substantially during the final project design, the noise abatement may be changed or eliminated from the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

## **BIOLOGICAL ENVIRONMENT**

### *Natural Communities*

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

The proposed project is in a highly urbanized area of San Mateo County that includes dense residential and commercial areas of the City of San Mateo. The vegetation in the interchange roadway shoulders in the project area consists of ruderal grass, low-growing annual/perennial vegetation, and a variety of trees and shrubs. The trees and shrubs in the project area and near the adjacent Right-of-Way (ROW) areas are primarily highway landscaping and may also contain a small number of volunteer plants. There are no streams or wetlands within or adjacent to the project site. There are no regional species or habitats of concern within one mile of the project site and therefore no such species will be affected by the project.

No habitat areas in the vicinity of the project site have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species section.

### *Wetlands and Other Waters*

A concrete-lined channel runs along, and just outside of, the Caltrans ROW on the southwest portion of the Biological Study Area (BSA) and enters an underground culvert near SR 82 (Natural Environment Study, Minimal Impacts (NESMI), Figure 5 and Photos 4 and 5). The nearest 'blue line' hydrologic features include two drainage ditches that either terminate or enter underground culverts at the Caltrain railroad tracks approximately, 1,800 feet east-southeast and 2,000 feet east-northeast, respectively, of the project site. These ditches run approximately 5,400 feet and 7,650 feet, respectively, east to Seal Slough (NESMI Figure 4). The nearest natural streams/creeks include an unnamed 'blue line' creek that drains into the concrete-lined channel running along the southwest right of way boundary approximately 3,000 feet west of the BSA, San Mateo Creek approximately 6,600 feet north-northwest of the BSA, and Laurel Creek approximately 6,800 feet south-southeast of the BSA. It is likely that the unnamed creek that drains to the concrete-lined channel that runs along the southwestern boundary of the ROW and enters an underground culvert connects to the ditch that runs eastward from approximately 1,800 feet east-southeast of the project site to Seal Slough. Ground-level surveys found no surface streams exhibiting ordinary high water marks or wetlands exhibiting hydrophytic vegetation within the project limits. There are no streams or wetlands within the project site footprint.

### *Plant Species*

Caltrans Biologists evaluated a combined list of the special-status plant species that occur in the region from the United States Fish and Wildlife Service (USFWS) and California Native Plant Society (CNPS) lists, and California Natural Diversity Database (CNDDB) records. The biological resources in the immediate vicinity of the BSA are very limited except for a small number of trees and some landscaping in the on-ramp/off-ramp configuration. Most of the BSA is developed and has paved surfaces including roads, sidewalks, curbs, and the overpass. The paved areas are mostly devoid of vegetation because the pavement and road surfaces support only hardy weeds that commonly grow in sidewalk and asphalt cracks. Caltrans biologists identified three habitat or land use types in or adjacent to the BSA: developed, non-native ruderal grassland, and ornamental woodland. Caltrans Biologists surveyed the project site and found that there are no federally or state-listed plant species or special-status plant species were identified within the BSA for the project.

### *Animal Species*

The developed areas in the BSA are of limited use to wildlife species because of the frequent human disturbance, the high likelihood of injury or mortality from vehicular traffic, and a lack of cover or food due to a lack of vegetation. The developed areas in the BSA may be used as movement corridors by non-native mammalian species such as the non-native domestic cat (*Felis catus*) and the domestic dog (*Canis lupus familiaris*), which prey on smaller wildlife species. Native mammals that can persist in highly urbanized settings, such as striped skunks (*Mephitis mephitis*) and raccoons (*Procyon lotor*), may also traverse the developed areas of the BSA. Native avian species such as Brewer's blackbird (*Euphagus cyanocephalus*) and mourning dove (*Zenaida macroura*), as well as non-native species such as the rock pigeon (*Columbia livia*), often forage and roost within developed habitats. The SR 92 overpass was examined for its suitability to provide roosting habitat for bats, and no crevices or other features that could support day roosts for bats were observed. Cliff swallows (*Petrochelidon pyrrhonota*) and black phoebes (*Sayornis nigricans*) may nest on the SR 92 overpass, although no old nests of these species were observed within the BSA during the ground-level surveys.

Because the project site consists of an interchange between a busy four-lane divided state route and a busy six-lane divided state route in a highly urbanized area, terrestrial animals are most likely discouraged from seeking forage, cover or other habitat requirements within the project area. There are no surface water features present within the project area, making the site unsuitable for aquatic species, species that have aquatic stages, and terrestrial species seeking to ingest water.

### *Threatened and Endangered Species*

Caltrans biologists evaluated the special-status wildlife species occurring in the region based on the USFWS and CDFW threatened and endangered species list and CNDDDB records. Ruderal grasslands and urban forest mix are not preferred habitats for any of the 22 animal species that are listed as federally threatened or endangered within the San Mateo topo quad or the 17 animal species of concern that have known occurrences within five miles of the project site (NESMI Table 1). Most of the regionally occurring special-status species were rejected for potential occurrence in the BSA because the project area lacks suitable habitat and/or is outside the range of the species. No federal or state-listed special-status species were observed during the ground-level surveys. Nevertheless, there are recorded occurrences of federal and state-listed special-status species within five miles of the project site that have limited potential to be present in the BSA before or during construction. Impacts to these 17 wildlife species are avoidable through the use of Caltrans' Construction Best Management Practices.

### *Invasive Species*

Although there are invasive, non-native plants in the BSA, there is a low potential for the project to cause these species to spread to nearby natural habitats because the area is highly disturbed and developed with no substantial connectivity to native habitats. Therefore, the spread of non-native plants is anticipated to be insubstantial.

### **Affected Environment**

The proposed project is in a highly urbanized area of San Mateo County that includes dense residential and commercial areas of the City of San Mateo. The vegetation in the interchange roadway shoulders in the project area consists of ruderal grass, low-growing annual/perennial vegetation, and a variety of trees and shrubs. The trees and shrubs in the project area and near the adjacent ROW areas are primarily highway landscaping and may also contain a small number of volunteer plants. There are no streams or wetlands within or adjacent to the project site. There are not regional species or habitats of concern within one mile of the project site and therefore they will not be affected by the project.

### **Environmental Consequences**

No special-status habitat types, riparian areas, or wetlands are present within the BSA, and therefore no impacts to these resources will result from the proposed project. It is unlikely that any species of special concern or state and/or federally threatened and endangered species will be present within the project site during implementation of the proposed project. Therefore, the project will have minimal and temporary impacts to biological resources.

The proposed project will result in the removal of an unknown number of medium-sized trees (4- to 12-inch-diameter at breast height) that were planted for landscaping purposes along the interchange. There are several well-established eucalyptus, blackwood acacia, and coast live oak trees distributed among the

vegetated areas within the SR 92/SR 82 interchange that may be affected by the proposed project through removal or pruning. The number of removed or pruned trees is not expected to have a substantial biological effect on the area's urban forest or on the populations of animal species that use the trees because of the low habitat quality provided by sparsely scattered trees in this heavily urbanized area.

No native migratory birds were observed nesting during ground-level surveys, but the potential exists for migratory birds to nest in trees or shrubs or on the SR 92 overpass within the BSA. Project implementation could result in the destruction of active nests if present in vegetation when clearing or tree removal occurs. The project could also result in the abandonment of eggs or young if project activities occur near active nests, disturbing adult birds to the point of nest abandonment. Because of the relatively low number of pairs that could be affected by the project, the regional abundance of any given bird species that would nest in the BSA, and project compliance with the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503 and 3503.5, including the presence of biological monitor onsite during construction, the project will not have a substantial effect on regional populations of any species.

#### **Avoidance, Minimization, and/or Mitigation Measures**

No sensitive habitat or listed species occur within the Caltrans ROW and no impact to areas other than the existing Caltrans ROW is anticipated, therefore no mitigation will be required. There will be no impacts to sensitive biological resources, no state or federal permits will be required. Adherence to Caltrans BMPs will be sufficient to protect the limited biological resources that occur in the vicinity of the project site. The primary biological resources of concern with the potential to occur in the vicinity of the project site are migratory birds.

CDFW Code sections 3503 and 3503.5 mandate protection of birds' nests and the MBTA of 1918 as amended (16 U.S.C. §§ 703–711) protects migratory birds from unlawful activities such as "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any . . . bird, or any part, nest or egg." Any work within the project limits during the nesting season will require protection for migratory nesting birds.

If construction occurs during the anticipated nesting season, i.e., between February 15 and September 1, a qualified Caltrans-supplied biologist(s) will install bird exclusion materials and conduct nesting bird surveys to comply with the CDFW Code and MBTA. The biologist(s) will receive a two-week notice prior to project implementation to schedule nesting bird surveys. The surveys will be conducted within 48 hours before any ground-disturbing activities occur, including vegetation removal, and will be valid for 3 days, after which new surveys will be conducted. This survey schedule will allow the biologist(s) to remove nests that are started between surveys, well prior to the start of egg-laying. Ground-disturbing activities will not begin until the Caltrans biological monitor has given clearance.



## **CONSTRUCTION IMPACTS**

### **Regulatory Setting**

Caltrans shall follow the *Design Information Bulletin 85: Guidance for the Consideration of Material Disposal, Staging and Borrow Sites* and FHWA policies and guidelines when developing the construction implementation plan to minimize temporary impacts from the project.

### **Affected Environment**

During project construction there may be temporary impacts in the following areas: construction phasing/schedule/work hours, noise, air quality (dust), access issues (pedestrian, cyclists, equestrians, etc.), utilities, detours, traffic delays, and emergency vehicle access and impacts associated with the staging and storage of equipment. These issues will be addressed during the Plans, Specification & Estimates (PS&E) phase of the project.

### **Environmental Consequences**

A Traffic Management Plan (TMP) will be developed in detail during the design phase. A TMP typically includes information regarding project impacts and transportation management measures. Project impacts include lane closures and modified access and transit, pedestrian and bicycle impacts. Transportation management measures include the following components: public information, motorist information, incident management, construction strategies and demand management strategies. This Interchange is located in the heart of City of San Mateo. Caltrans shall coordinate with the City of San Mateo to develop a TMP to minimize delays and any inconveniences to the public and businesses nearby.

#### *Noise*

It is possible that the high levels of noise generated by construction equipment may annoy residents, but it will likely be short-lived at each location. Construction equipment should be required to conform to the provisions in Section 14-8.02 Noise Control, of the latest Standard Specifications. These requirements are meant to minimize the impact from short duration construction noise.

### **Avoidance, Minimization and/or Mitigation Measures**

#### *Noise*

In addition to the aforementioned Standard Specifications, construction noise impacts can be minimized by implementing some or all of the following measures:

- Avoiding construction activities during the nighttime and on weekends.
- Constructing noise barriers as the first order of work.

- Using stockpiled dirt as earth berms where possible.
- Keeping noisy equipment and haul roads away from sensitive receptors.
- Keeping the community informed of upcoming especially noisy construction activities and establish a field office to handle noise complaints.

## CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF<sub>6</sub>), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO<sub>2</sub>, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)<sup>6</sup>.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.<sup>7</sup>

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<sup>6</sup> [http://climatechange.transportation.org/ghg\\_mitigation/](http://climatechange.transportation.org/ghg_mitigation/)

<sup>7</sup> [http://www.fhwa.dot.gov/environment/climate\\_change/mitigation/](http://www.fhwa.dot.gov/environment/climate_change/mitigation/)

## Regulatory Setting

### *State*

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order (EO) S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

## Project Analysis

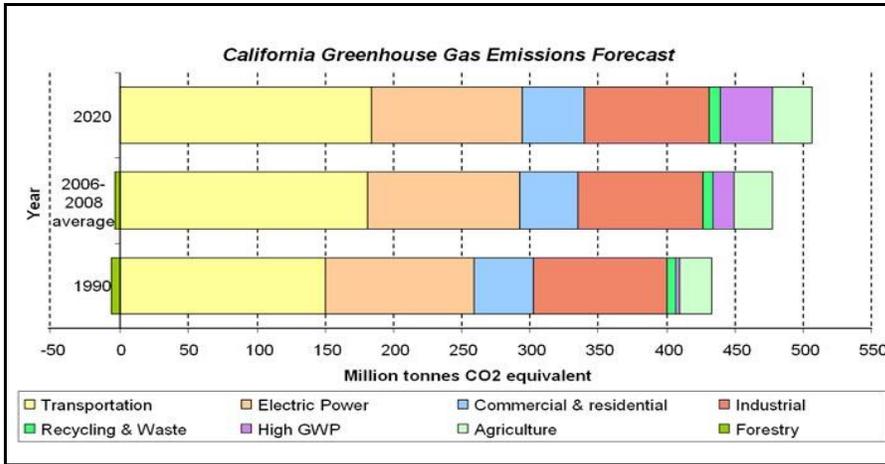
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.<sup>8</sup> In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

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<sup>8</sup> This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

**Figure 16. California Greenhouse Gas Forecast**



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.<sup>9</sup>

One of the main strategies in Caltrans Climate Action Program to reduce GHG emissions is to make California’s transportation system more efficient. The highest levels of carbon dioxide (CO<sub>2</sub>) from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 17 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel, corridors GHG emissions, particularly CO<sub>2</sub>, may be reduced.

<sup>9</sup> Caltrans Climate Action Program is located at the following web address:  
[http://www.dot.ca.gov/hq/tpp/offices/ogm/key\\_reports\\_files/State\\_Wide\\_Strategy/Caltrans\\_Climate\\_Action\\_Program.pdf](http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf)

**Figure 17. Possible Effect of Traffic Operation Strategies in Reducing On-Road CO<sub>2</sub> Emission<sup>10</sup>**

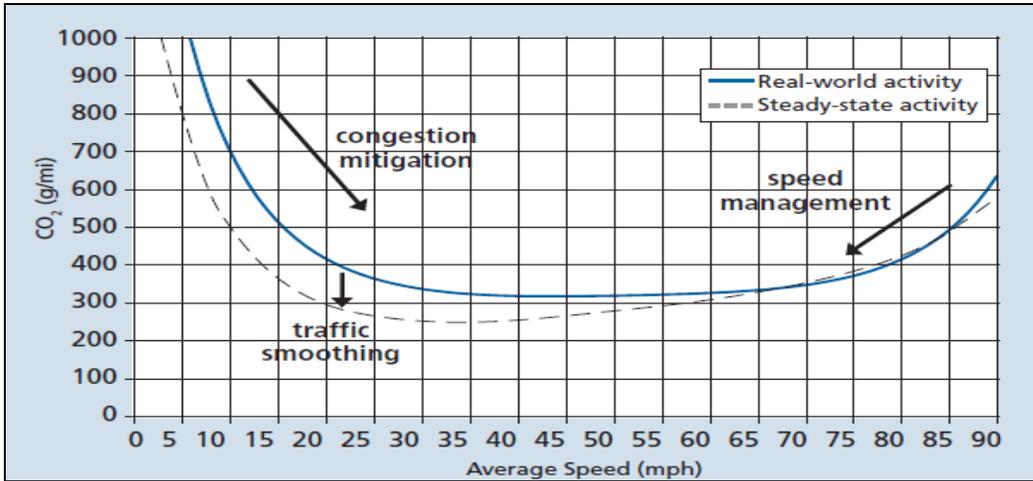


Table 28 shows that in anticipation of increased VMT in future years, implementation of the proposed Build Alternative is expected to improve traffic operations at the SR 92/EI Camino Real interchange ramp terminal intersections and reduce vehicle queue spillback to westbound SR 92 during the typical weekday AM and PM peak periods. According to the Fehr and Peers 2013 traffic study, the majority of the improvements are in the overall reduction in vehicle delay and improvement of the Level of Service on ramps servicing the project area as compared to no-build scenarios (Fehr and Peers, July 2013). The Build Alternative would improve operations at the SR 92/EI Camino Real interchange beginning in the opening year (2018) and the benefits from the Project would continue through the design year (2038).

A comparison between the existing and projected CO<sub>2</sub> emissions from the project area, under build and no-build conditions, is presented in Table 28 below. While VMT is projected to increase and LOS is expected to improve in build over no-build conditions, total CO<sub>2</sub> emissions are not expected to have significant changes between scenarios or years. In future years, the lower emission factors anticipated from great vehicle efficiencies and lower carbon fuel intensities, due to the Pavley Clean Car Standards and Low Carbon Fuel Standards, offset the emissions due to greater VMT. Emissions are expected to decrease slightly in 2018 and increase again in 2038 but below existing levels. Thus, the project is not expected to result in a significant increase in emissions compared to no-build conditions.

**Table 28. Projected CO<sub>2</sub> Emissions**

<sup>10</sup> **Traffic Congestion and Greenhouse Gases:** Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010) <<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>>

		2012	2018		2038	
		Existing <sup>a</sup>	No-Build	Build	No-Build	Build
VMT per day <sup>b</sup>		70,992	77,644	77,644	93,070	93,070
Average Speed (mph) <sup>c</sup>	Peak AM	35	34	36	35	30
	Peak PM	29	26	28	27	25
	Non-Peak	53	52	52	50	50
Average grams CO <sub>2</sub> per mile <sup>d</sup>		70,992	77,644	77,644	93,070	93,070
CO <sub>2</sub> , tons/day		34.0	31.1	30.6	32.1	32.2
<p><sup>a.</sup> Existing VMT was calculated by expanding the peak hour data to get the four hour peak period VMT whereas the traffic operations model calculates the peak period VMT based on data from each hour of the peak period model.</p> <p><sup>b.</sup> VMT per day is the sum of the peak and non-peak VMT per day summed across 8 links impacted by the project: SR 92 eastbound west link, SR 92 eastbound east link, SR 92 westbound east link, SR 92 westbound west link, SR 82 northbound south link, SR 82 northbound north link, SR 82 southbound north link, and the SR 82 southbound south link. Peak VMT from the Fehr and Peers traffic study was not used. This is because the VMTs provided in the TOAR encompass roadways in a much larger area than the project area. The climate change study focused on comparing CO<sub>2</sub> outputs within the project limits and the VMTs are limited to vehicle movements on roadway segments within said project area.</p> <p><sup>c.</sup> Speed averaged over link volume and weighted by peak or non-peak scenarios.</p> <p><sup>d.</sup> The calculations used per mile emission factors from EMFAC 2011 based on average vehicle speed, year, location, aggregated vehicle types, season, and location. The EMFAC 2011 model reflects the emissions benefits of ARB's recent rulemakings including on-road diesel fleet rules, Pavley Clean Car Standards and the Low Carbon Fuel Standard. Average emission factors here are based off of the individual emission factors and weighted across the different VMT and average speeds by link, year, and peak period.</p>						

The project is included in the current Regional Transportation Plan (the Transportation 2035 plan<sup>11</sup>, reference number 230424) and Transportation Improvement Program (TIP). The results of the project's CO<sub>2</sub> analysis is consistent with the Final EIR of the regional RTP, which also anticipated lower CO<sub>2</sub> emissions rates. Regarding the Transportation 2035 plan, which includes this project, the Final EIR states:

As operational CO<sub>2</sub> emissions rates are projected to be reduced below existing levels through the horizon year of the proposed Project, and as the anticipated increase in VMT over the planning period is primarily due to regional growth and development outside the scope of Transportation 2035 Plan projects, the proposed Project's contribution to the significant cumulative impact of global climate change is not cumulatively considerable.

### Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing,

<sup>11</sup> [http://www.mtc.ca.gov/planning/2035\\_plan/](http://www.mtc.ca.gov/planning/2035_plan/)

emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

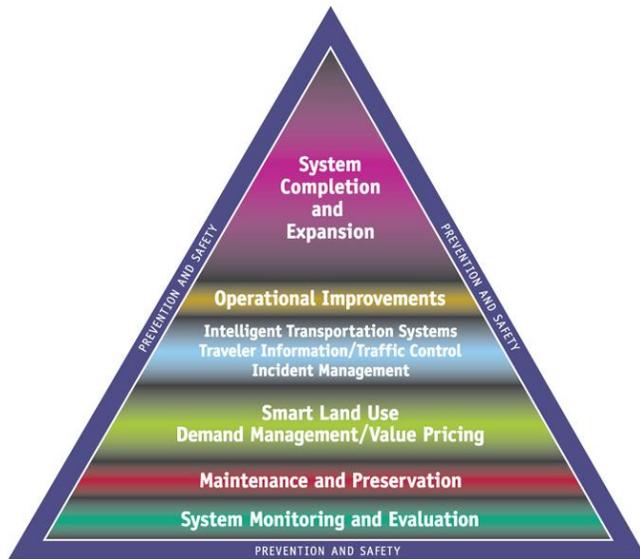
In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Measures to reduce construction emissions may result due to co-benefits from measures listed in the avoidance, minimization and/or mitigation measures of the Air Quality section of this chapter. These measures include maintenance of construction equipment and vehicles, limiting construction vehicle idling time, and scheduling and routing of construction traffic to reduce engine emissions.

### **CEQA Conclusion**

While the project will result in an increase in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. It is Caltrans determination that in absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change. Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section

### **Greenhouse Gas Reduction Strategies**

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO<sub>2</sub> reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 18 The Mobility Pyramid.



**Figure 18. Mobility Pyramid**

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing

vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is

doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and ARB.

Caltrans is also working towards enhancing the State’s transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the State’s long-range transportation plan to meet California’s climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California’s future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State’s transportation needs.

Table 29 on the next page, summarizes Caltransal and statewide efforts that Caltrans is implementing to reduce GHG emissions. More detailed information about each strategy is included in the [Climate Action Program at Caltrans](#) (December 2006).

Table 29 Climate Change/CO <sub>2</sub> Reduction Strategies						
Strategy	Program	Partnership		Method/Process	Estimated CO <sub>2</sub> Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries	2.5 % limestone cement mix	1.2	4.2	
			25% fly ash cement mix	0.36	3.6	
			> 50% fly ash/slag mix			
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

**Table 29. Climate Change/CO<sub>2</sub> Reduction Strategies**

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)<sup>12</sup> provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

1. Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
2. In addition, City/County Association of Governments San Mateo provides ridesharing services and park-and-ride facilities to help manage the growth in demand for highway capacity.
3. Landscaping reduces surface warming and, through photosynthesis, decreases CO<sub>2</sub>. The project proposes planting in the intersection slopes, drainage channels, and seeding in areas next to frontage roads as well as planting a variety of different-sized plant material and scattered skyline trees where appropriate but not to obstruct the view of the mountains. Caltrans has committed to planting at least 40 trees. These trees will help offset any potential CO<sub>2</sub> emissions increase.
4. The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost \$60 to \$70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project's CO<sub>2</sub> emissions.<sup>13</sup>
5. According to Caltrans Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions.

### **Adaptation Strategies**

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from

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<sup>12</sup> [http://www.dot.ca.gov/hq/tpp/offices/orip/climate\\_change/projects\\_and\\_studies.shtml](http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml)

<sup>13</sup> Knoxville Business Journal, "LED Lights Pay for Themselves," May 19, 2008 at <http://www.knoxnews.com/news/2008/may/19/led-traffic-lights-pay-themselves/>.

flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011<sup>14</sup>, outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks .

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009)<sup>15</sup>, which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation

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<sup>14</sup> <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>

<sup>15</sup> <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report<sup>16</sup> to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

The San Francisco Bay includes approximately 1000 miles of shoreline and thus is vulnerable to a range of natural hazards, including storms, extreme high tides, and projected rising sea levels. According to several sea level rise projection maps\*, sea level rise (SLR) in the next century may potentially inundate the land uses and roadway infrastructure within the Bay. The potential for projected SLR within the proposed Project vicinity in the 2050 and 2100 years may exacerbate existing natural hazards within the project area that will need to be addressed on a regional level through collaboration between Caltrans and local agencies with land use authority. The existing interchange is outside of the area shown on the attached map of direct impacts due to existing flooding potential or projected sea level rise inundation. This project proposes to modify an existing structure with an approximated design life of approximately 20 years. A comprehensive planning and adaptation plan approach will be required through collaboration efforts between

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<sup>16</sup> *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at [http://www.nap.edu/catalog.php?record\\_id=13389](http://www.nap.edu/catalog.php?record_id=13389).

Caltrans and the local land use planning agencies to ensure future plans for infrastructure and the surrounding land uses consider sea level rise.

Caltrans will continue to collaborate with the County of San Mateo, the Metropolitan Transportation Commission, and other regional planning agencies to develop a SLR adaptation plan that addresses adaptation plans and strategies to address future sea level rise. Caltrans reviewed the several available maps of the area surrounding the project, including maps from the Pacific Institute<sup>17</sup>, San Francisco Bay Conservation and Development Commission (BCDC)<sup>18</sup>, and the USGS<sup>19</sup>. The BCDC sea level rise map, showing the sea level rise at 16 and 55 inches in the project vicinity.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

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<sup>17</sup> [http://www.pacinst.org/reports/sea\\_level\\_rise/hazmaps/San\\_Mateo.pdf](http://www.pacinst.org/reports/sea_level_rise/hazmaps/San_Mateo.pdf)

<sup>18</sup> [http://www.bcdc.ca.gov/planning/climate\\_change/maps/16\\_55/cbay\\_west.pdf](http://www.bcdc.ca.gov/planning/climate_change/maps/16_55/cbay_west.pdf)

<sup>19</sup> <http://cascade.wr.usgs.gov/data/Task2b-SFBay/index.shtm>

## CHAPTER 4- Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: Project Development Team (PDT) meetings, interagency coordination meetings and public environmental scoping meetings. This chapter summarizes the results of Caltrans efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

Caltrans has held and continues to hold near monthly project development team (PDT) meetings since August 2012. A summary of public participation activities completed for this project are described in the following paragraphs.

A open house by Caltrans at San Mateo City Hall was held on January 29, 2014, from 5:30 PM to 8:30 PM. The information presented was to outline the environmental process and to present the different design variations considered in the project.

Notices for the aforementioned meeting was published in the San Mateo Daily Journal on January 15, 2014. Additionally, announcements were posted on the Department's District 4 Twitter account on January 29, 2014 at <https://mobile.twitter.com/CaltransD4>.

Written comments on the scope and content of this Initial Study were accepted until February 15, 2014.

There were forty written comments received during the comment period including the open house on January 29, 2014. It is not practice for Caltrans to respond to these comments individually. The responses are addressed in this document, only. Most of the comments encourage Caltrans to consider design features that promote safe and convenient access for bicyclists and pedestrians. Other comments include traffic, landscaping, noise and air quality resources.

Caltrans and the project sponsor, City of San Mateo's staff, met numerous times to address comments received on bicycle and pedestrian design features.

The City of San Mateo staff met with the Silicon Valley Bicycle Coalition and received feedback on the design elements that been considered for sidewalks and bicycle lanes.

On April 9, 2014 the City met with the Public Works Commission and presented the new bicycle and pedestrian design features.

# Notice of Availability of Draft Environmental Document and Intent to Adopt Negative Declaration as well as Notice of Open House/Map Display

**PUBLIC NOTICE**

**NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL DOCUMENT AND INTENT TO ADOPT A NEGATIVE DECLARATION AS WELL AS NOTICE OF OPEN HOUSE/MAP DISPLAY ON CHANGES PROPOSED FOR SR 92-82 INTERCHANGE**

<b>WHAT'S BEING PLANNED</b>	<p>CALTRANS (California Department of Transportation) proposes to modify the State Routes 82 (SR 82) and SR 92 interchange to reduce traffic congestion, bottlenecks, weaving and queuing spillback at the interchange on and off ramps. The purpose of this project is to increase performance at the on and off ramps and to address the secondary operation deficiencies on the SR 92 mainline. This would entail widening the existing ramps and reconfiguring the existing interchange from a full cloverleaf to a partial cloverleaf.</p>		
<b>Why This Ad</b>	<p>CALTRANS has studied the effects this project may have on the environment. Our studies show it will not significantly affect the quality of environment. The report that explains this is called an Initial Study with Proposed Negative Declaration. This notice is to tell you of the preparation of the Initial Study with Proposed Negative Declaration and of its availability for you to read and to offer a public open house (map display) to attend.</p>		
<b>What's Available</b>	<p>Maps for the Proposed Negative Declaration and Initial Study, and other project information are available for review and copying at the CALTRANS District 4 Office, 111 Grand Avenue, Oakland, California, on weekdays from 8:00 AM to 5:00 PM. The Initial Study with Proposed Negative Declaration is also available at:</p> <table border="0" style="margin-left: 40px;"> <tr> <td>San Mateo City Hall 330 W 20th Ave San Mateo, CA 94403</td> <td style="padding-left: 20px;">City of San Mateo Public Library 55 W 3rd Ave San Mateo, CA 94402</td> </tr> </table>	San Mateo City Hall 330 W 20th Ave San Mateo, CA 94403	City of San Mateo Public Library 55 W 3rd Ave San Mateo, CA 94402
San Mateo City Hall 330 W 20th Ave San Mateo, CA 94403	City of San Mateo Public Library 55 W 3rd Ave San Mateo, CA 94402		
<b>Where You Come In</b>	<p>On the Internet: <a href="http://www.dot.ca.gov/dist4/envdocs.htm">http://www.dot.ca.gov/dist4/envdocs.htm</a></p> <p>You are invited to review the Initial Study with Proposed Negative Declaration for this 92-82 interchange modification project and provide comments to us. Please mail your comments to Yolanda Rivas, District Branch Chief, California Department of Transportation, District 4 Office of Environmental Analysis, P.O. Box 23660, Oakland, CA 94623 or email them to <a href="mailto:yolanda.rivas@dot.ca.gov">yolanda.rivas@dot.ca.gov</a>. Your comments should be received no later than February 15, 2014.</p>		
<b>When And Where</b>	<p><b>OPEN HOUSE/MAP DISPLAY</b></p> <p>Date: January 29, 2014 Time: 5:30 pm to 8:30 pm Place: San Mateo City Hall 330 W 20th Avenue San Mateo, CA 94403</p>		
<b>Contact</b>	<p>For more information about this study or any transportation matter, call CALTRANS at (510) 286-4444. Individuals who require documents in alternative formats are requested to contact the District 4 Public Affairs Office at (510) 286-6445. TDD users may contact the California Relay Service TDD line at 1-800-735-2929 or Voice Line at 1-800-735-2922.</p>		

Sign-In Sheet for Open House/Map Display (1 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
Laurie Watanuki	1007 E. STHAVE SM.	lwatanuki@gmail.com
Jeffrey Wang	148 29 <sup>th</sup> Ave	wang-j@att.net
Matt Jordan	104 Hayward ave.	
Sheila Canzian	1322 Palm Ave, SM	scanzian@cityofsanmateo.org
Howard Friedman	1951 O'Farrell St. #314 SM	howardfriedman@cep.com
CHRISTOPHER BROUSSEAU	134 12 <sup>th</sup> Ave SM	CHRISBROUSSEAU@GMAIL.COM
Cathy Zammit	350 W 20 <sup>th</sup> AV SM	czammit@cityofsanmateo.org
JEFF KUEPER	604 Sunnyvale SM	JEFFKUEPER@SBCUBA.NET
Frank Markowitz	3028 Monterey St. SM	frankmarko56@comcast.net

Sign-In Sheet for Open House/Map Display (Page 2 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
EMITT WALLACE	1951 O'FARRELL ST. #102 S.M. 94403	wallaces1951@comcast.net
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Scott Keane	1563 Yew Street <sup>SM</sup> 94402	scottckeane@yahoo.com
Erica <sup>Jeff</sup> Gilbert	223 E. Bellevue 94401	cardman49@aol.com
ROSEMARY COHAN	1949 IVY ST SM 94403	Puz721@aol.com
MATT & DIER FRISBIE	198 SPURAWAY DR SM 94403	MATTHEWFRISBIE@GMAIL.COM
Richard Ito	1247 ATAMEDA DELASPOKAS <sup>SM</sup> 94402	
STEVE & AUREA HERRICK	1524 KALMIA ST	STEVEHERRICK@MC.COM
BERNARD LAPEDES	204 ROSIE ST. SM 94403	esnbern@aol.com

Sign-In Sheet for Open House/Map Display (3 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
Lisa Krekorian/John Nelson	518 S. Eldorado St SM	fenesboy@aol.com
Nicole Lynn	935 S. Humboldt St. SM	nlynn@vivisioninc.com
Jennifer Carson	2813 Garfield St, SM	jandccarson@comcast.net
Anna Kuhel	200 W. 3rd Ave, SM	9K4HRE@myastound.net
Tim Driscoll	1814 Palm Ave, SM	driscolltj2@gmail.com
SANTA EVERETTE	3329 Los Prados St. SM	ecosanta@gmail.com
DOUGLAS LOWER	155 Bover Pl 700 SM	lowerpower2@yahoo+gmail

Sign-In Sheet for Open House/Map Display (4 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
Diane Costello	96. 19 <sup>th</sup> Ave SM	dee.maki@gmail.com
John Marconi	120 Monza Way, San Bruno, CA 94066	JOHN@110VJACKS.COM
ZES MAHMOOD	28 15 <sup>th</sup> AVE, San Mateo	LAHORE@GMAIL.COM
Jesenia Diaz	1586 Lodi Ave., SM 94401	jesenia@gmail.com
Keith Purdy	1917 Palmy Ave 94403	LSKPURDY@COMCAST.NET
Susan Shankle	1624 Tagon Ct 94403	susanshankle@comcast.net
Margie Radzyk	204 Spuraway Dr. 94403	mradyk@stgnc.com
NORMAN BRADLEY	206 S. ELDRADO	Norman@pryansters.org

Sign-In Sheet for Open House/Map Display (5 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
Nonnie Dinges	1543 Yew St, SM	dingesnannie@gmail.com
Diane Antoniazzi	1740 Ivy St. SM.	d.antoniazzi@comcast.net
BOB STINE	3215 Lano St.	RBRSTINE@GMAIL.COM
Doreen Miller	515 Birch Ave. SM	doreenfmiller@hotmail.com
Julia Lovotti	42 Meeker Ct. SM	jemlov@yahoo.com
Emrique Digez	611 Second Ave.	e e d 611 @HOTMAIL.COM
Arnold & Debbie Rodman	29 Ericson Road	computer-tech@po.box.com
James Southward	2033 Stratford Way	jim@southwardtax.com
Nancy South	2033 Stratford way	Harry South @ Gmail.com

Sign-In Sheet for Open House/Map Display (6 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
Julia Hirsch	1531 Edinburgh Sm.	
Greg Gria/ou	3809 PASADENA DR.	CGRIA/OU @ AOL.COM
Katherine Strach	451-22nd AVE.	kdstrach@yahoo.com
Rick Bonilla	—————	—————
Wes Taska	15 South Eldorado St., SM	TORARATON @ YAHOO.COM
Bertha Sanchez		—————
Edith Cabuslay	1215 Dix Street	cabuslay@comcast.net
Stacy Weiss	128A N. Kingston St., S.M.	stacyweiss@mac.com
Tom Elliott	✓        ✓        ✓	ycountsm @astound.net

Sign-In Sheet for Open House/Map Display (7 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
Open House/Informational Meeting/Map Display  
San Mateo City Hall Atrium  
Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
George Baxter	1537 Edinburgh St	gibaxter@yshas.com
Karl Pope	222 23 <sup>rd</sup> Ave	KarlPope@gmail.com

Sign-In Sheet for Open House/Map Display (8 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
Tim Jad	1597 yew st. S.M.	timjad@gmail.com
CHUCK COSTELLO	96-19th St	CHUCK.COSTELLO@GMAIL.COM
TAMMY BACCETTI	1915 IVY SM	tamera.baccetti@gmail.com
Ron Marblestone	1439 Ashwood DR.	
JAY MICHLIN	4140 George Ave #1	jay.michlin@grub.com
Marielle A. Cuisson	_____	mariellecuisson@yahoo.com
JOSEPH M. HURLEY	1250 smw crescent met	hurleyj@samttrans.com
Walen Loring	1741 Celeste St SM	
Marshall Loring		

Sign-In Sheet for Open House/Map Display (9 of 9)



S.R. 92-82 (El Camino Real) Interchange Improvement Project  
 Open House/Informational Meeting/Map Display  
 San Mateo City Hall Atrium  
 Wednesday, January 29, 2014 – 5:30 pm to 8:30 pm

**SIGN-IN SHEET**

Name (Please Print):	Address (Please Print):	E-mail Address (Please Print):
JOAN DISKIN	136 WOODBRIDGE CIRCLE SAN MATEO	JDISKIN@CITYOF.SANMATEO.CA.GOV
Kimberly Jo-Vogel	1533 Yew St. San Mateo	
Dann Spolar	702 E 16th Ave San Mateo	reach.4.t@sbcglobal.net
Jean Higaki	N/A (C/CAG)	jhigaki@smc.gov.org
Diana RTHH	221 S. FREMONT ST #208 San Mateo	diskin208@gmail.com
Julia BOTT	1914 PALM AVE SM 94403	JBOTT@BARNET.COM
R.C.M. Honor	1720 Ivy St SAN MATEO	RC_SMI@EIT@YANON.COM
Holly Hewitt	1531 Edinburgh St. S.M.	hhewitt@aol.com
Catherine Brinkman	1700 S El Camino Real SM	catherine.brinkman@gmail.com

**Public Comment 1:**

#1

Comment received from T. Jack Foster, Jr.

*T. JACK FOSTER, JR.  
1840 Gateway Drive, Ste 100  
Foster City, California 94404-4066*

Phone: (650) 312-9700 x204  
Fax: (650) 312-9708

February 11, 2014

Caltrans District 4  
Attention: Yolanda Rivas  
P. O. Box 23660, MS 8B  
Oakland, CA. 94623-0660

Dear Ms. Rivas.

I have studied the proposed redesign of the 92/84 interchange and have some thoughts. I use this interchange two or more times a day.

Frankly, I think it works pretty well with one exception. On west-bound 92, the exit onto El Camino north bound (84) can back up. This could be relieved if on El Camino, the right lane were channeled in a manner to keep cars out of it. The only cars using that lane would be those exiting 92, west bound, on to El Camino, north. I frequently see a car using that lane when all the other northbound lanes are empty. Cars on the off ramp must wait.

Because local traffic uses the interchange to get across the railroad tracks, when they are going from El Camino to Delaware or vice versa, it would help to have the off ramp connect directly to the next on-ramp, without needing to get into the traffic lanes.

I would hate to see two more traffic stops on El Camino.

Very truly yours,



T. Jack Foster, Jr.

**Caltrans Response to Public Comment 1:**

Caltrans has received your comment on the proposed project and has the following response:

The proposed project would address the vehicle back-up at the westbound SR 92 to northbound El Camino Real off-ramp by signaling El Camino Real at the off-ramp, thus providing a dedicated phase for vehicles to turn from the ramp.

The high volume of through traffic on northbound El Camino Real (expected to reach 3,000 vehicles during the PM peak hour by 2038) requires three through lanes. Reducing El Camino Real to two northbound lanes at the off-ramp would result in additional congestion on El Camino Real. Additionally, vehicles coming from the off-ramp and turning left onto Bovet Road would have a limited distance to weave across the through lanes and into the left-turn pocket, creating additional congestion. The proposed partial-cloverleaf addresses this issue by allowing off-ramp traffic to turn directly into their desired lane on a green light.

A direct connector between El Camino Real and Delaware Street is beyond the scope of this project.

## Public Comment 2:

#2

Comment received from Susan Shankle  
**Susan Shankle**  
**Paul Pittenger**  
1624 Toyon Ct.  
San Mateo, CA 94403

February 9, 2014

Re: **State Route 92-82 (El Camino) Interchange Improvement Project**

To: Yolanda Rivas, District Branch Chief  
California DOT, District 4 Office of Environmental Analysis  
P.O. Box 23660  
Oakland, CA 94623

Cc: Senator Leland Yee  
Senator Jerry Hill

Dear Yolanda, Leland and Jerry,

We're very glad to see the proposed improvements on the 92/82 interchange here in San Mateo. I've reviewed the documentation available to the public and attended the public meeting last month. Thank you for the opportunity to offer our comment and feedback.

It seems that the insides of the cloverleaves are intended to be landscaped. This seems ill-advised and misses an opportunity to be more creative and efficient.

The current drought demands that we cut water usage, and the long-term probabilities of further drought and increased population surely require that we do not establish any more shrubbery on public land that will require irrigation and maintenance. Further, planting shrubs there would prevent us from using the space to install solar panels that would benefit the community by providing another power source.

When queried, our DOT reps at the public meeting rejected the idea as being "an eyesore". We do not need such old-fashioned attitudes. I care about my own garden and neighborhood being attractive, but I do not care if my freeway interchange is. On the contrary, I hope that motorists maneuvering around the turns are watching where they are going and not observing the oleanders.

We live in a crowded part of the world and yet we continue to build more houses that are all going to need water and power. Why not use this precious land space to generate much-needed energy and save on water? Possibly a deal could be cut with one of our local solar companies who would welcome the PR and visibility.

I urge you to step up and get creative with this opportunity to capitalize further on a much-needed and apparently elegant interchange project. I'm sure I would not be the only taxpayer who would be outraged to see plants and irrigation installed on that valuable land.

Sincerely,



Susan Shankle  
Citizen, Taxpayer, Motorist, Business Owner and Voter

**Caltrans Response to Public Comment 2:**

Caltrans has received your comments on the proposed project and has the following responses:

The insides of the loop on-ramps and off-ramps are to be replanted to replace impacted existing landscaping, and provide erosion control, storm water treatment, and visual quality. Caltrans policy is to provide replacement highway planting from construction impacts.

The project landscape design plan will be based upon drought tolerant principles, namely low-water irrigation (drip) and use of drought tolerant and California native plant species. Even in periods of drought or any water supply disturbance, the objective is for the planting to survive, just as native plants survive drought in natural settings.

Installing solar panels and generating electricity are not part of the purpose and need of the proposed project, which is to reduce existing traffic congestion, bottlenecks, weaving and queue spillback at the interchange on- and off-ramps.

### Public Comment 3:

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**From:** [wallaces1951@comcast.net](mailto:wallaces1951@comcast.net) [mailto:[wallaces1951@comcast.net](mailto:wallaces1951@comcast.net)]

**Sent:** Friday, January 24, 2014 12:03 PM

**To:** Rivas, Yolanda@DOT

**Subject:** Comment on pedestrian concerns re: State Route 92-82 (El Camino Real) Interchange Improvement Project, San Mateo County

I have reviewed the above-described improvement project document. It is a very well-researched document with the exception of looking at pedestrian safety at the undercrossing of State Route 92-82. References to pedestrian traffic are at pgs. 15, 23, and 40. All I could find was a vague reference to "provide safe mobility to pedestrians, etc." There are no details, which I find alarming.

I live at Corte Bella on O'Farrel St. next to Highway 92. I have lived here 16 years. I have used the undercrossing of State Route 92-82 only once. I have not used it again because of the obvious danger to pedestrians. Traffic at the interchange moves at a high speed, making it difficult for a pedestrian to judge when it is safe to use the pedestrian crossings.

Highway 92 basically cuts off pedestrian traffic from our area to downtown San Mateo. Only the most brave pedestrians would choose to use the undercrossing.

There was talk a while back of creating a pedestrian bridge. Obviously, that has not worked out.

My recommendation: Put more detail into the draft document about pedestrian safety and maximize the available resources to make it safer to use the undercrossing at State Route 92-82.

Sincerely,

Emitt Wallace  
1951 O'Farrell St. #102  
San Mateo, CA 94403

e-mail: [wallaces1951@comcast.net](mailto:wallaces1951@comcast.net)

p.s. I will attend the January 29 Informational Meeting at City Hall.

### **Caltrans Response to Public Comment 3:**

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

- A minimum 8-foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.
- A Class II bike lane on SR 82 is also now planned between the ramp intersections that is 5-feet in width in each direction. The lane is adjacent to the sidewalk for the entire length of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles driving onto the on-ramps.
- Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the city. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

## **Public Comment 4:**

-----Original Message-----

From: Mary Robblee [<mailto:mrobblee@sbcglobal.net>]

Sent: Saturday, January 25, 2014 7:21 PM

To: Rivas, Yolanda@DOT

Subject: Widening of highway 92

Is the redoing of the Delaware and El Camino 92 exits being done in preparation for widening highway 92? If so, when is this going to be done? The noise we hear now is horrible and two cars have already come thru the fence with one landing on my neighbors front lawn.

Sent from my iPad

**Caltrans Response to Public Comment 4:**

Caltrans has received your comment and has the following response:

The widening of SR 92 is on hold at this time. In addition, it is not in the scope of work for the proposed project. The modification of the interchange exits are proposed to address the existing traffic congestion, bottlenecks, weaving and queue spillback at the SR 92-82 interchange on and off ramps.

The proposed project applies the federal regulations for traffic noise abatement. The regulations were applied to all of the interchange quadrants and detailed analysis determined that only the quadrant at the east-bound off-ramp from SR 92 was able to qualify for noise abatement.

## Public Comment 5:

-----Original Message-----

From: David Vogel [<mailto:dkvogel@att.net>]  
Sent: Thursday, January 30, 2014 8:51 AM  
To: Rivas, Yolanda@DOT  
Subject: Yolanda: Highway 92 Widening Project?

Hi Yolanda,

My family and I reside at 1533 Yew Street in San Mateo, and I recall seeing a notification a year ago regarding plans for a study to assess the impact of widening Highway 92 between 101 and 280. I've searched through the websites at CalTrans, MTC, and City of San Mateo, but I can't find any information regarding this study. Do you know where we might find that information?

My wife attended the city meeting last night regarding the El Camino / Highway 92 interchange project, and she was told that there is currently no plan to widen Hwy 92 and that 2038 would be the timeframe that such a project might be considered (part of a 20yr planning cycle). Can you verify whether this information is correct?

Thanks in advance,  
David Vogel

**Caltrans Response to Public Comment 5:**

A Project Study Report was prepared in July 2001 that addresses the widening of SR 92, however the project is on hold at this time, according to City/County Association of Governments-San Mateo (C/CAG). Other future widening project information can be found at

[http://www.mtc.ca.gov/planning/2035\\_plan/FINAL/T2035\\_Plan-Final.pdf](http://www.mtc.ca.gov/planning/2035_plan/FINAL/T2035_Plan-Final.pdf).

## Public Comment 6:

#6

Comment received from Bernard Franklyn

**Romaya, Leahnora@DOT**

---

**From:** Bernard Franklyn [bgbr@operamail.com]  
**Sent:** Monday, February 03, 2014 10:18 PM  
**To:** Romaya, Leahnora@DOT; Romaya, Leahnora@DOT  
**Subject:** Hiway 92 / El Camino Real improvement project

We have resided & worked in San Mateo & Foster City since 1981. We use this interchange or drive past it on a daily basis; either east & west on 92 or north & south on El Camino Real.

We believe this proposal will solve several vexing problems this interchange has. We applaud CalTrans for coming up with such an imaginative solution.

Bernard & Linda Franklyn  
1131 Compass Lane, #311  
Foster City, CA. 94404  
650 372 9877

--

Bernard Franklyn  
[bgbr@operamail.com](mailto:bgbr@operamail.com)

**Caltrans Response to Public Comment 6:**

Caltrans has received your comment. Thank you for providing your input on the proposed project.

## Public Comment 7 (Page 1 of 3):

#7

Comment Received from Pat Giorni (Page 1 of 3)

February 12, 2014

To whom it may concern;

Thank you for the opportunity to provide comment on the SR 92-82 Interchange Improvement Project Initial Study with Proposed Negative Declaration. The purpose and need of the project is to reduce existing traffic congestion, bottlenecks, weaving and queue spillback at the interchange on and off ramps (Chapter 1 page 12).

Although the project is ostensibly presented as a means to securing greater vehicle, pedestrian and bicycle safety as well as a higher vehicle Level of Service rate on the El Camino Real at the intersections of ECR (SR82) and the on/off-ramps of SR92, the greater and clearer subtext is that this project has been designed to primarily reduce existing traffic congestion, bottlenecks, weaving and queue spillback at the interchange on- and off-ramps to and from SR92 to and from US101, with already constructed but as yet non-operating ramp traffic metering lights, in order to increase the LOS on US101. With the construction of wider off-ramps at the SR82/SR92 intersections that will in essence provide a parking lot allowing for higher vehicle egress onto ECR a higher negative impact than currently identified will be assigned to pedestrians and bicycle riders through unintended consequences not fully explored in this document.

The Proposed IS/ND, showing scant consideration for DD-64-R1, the Complete Streets Act (AB 1358), nor even brought for review to the Caltrans District 4 Bicycle Advisory Committee Project Matrix (<http://www.dot.ca.gov/dist4/transplanning/docs/d4bacworkplanexhibita102011.pdf>) while completely ignoring the Grand Boulevard Initiative of which Caltrans District 4 (Bijan Sartipi, Task Force member) is a lead support; has not assessed the effectiveness of the City/County Association of Governments of San Mateo provision of ridesharing services and park-and-ride facilities to help manage the growth in demand for highway capacity under Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012); nor mentioned C/CAG Smart Corridor Plan, should be submitted as an Initial Study/Mitigated Negative Declaration and then re-circulated for public comment for the following reasons:

### XVI. TRANSPORTATION/TRAFFIC (Pg 131-132):

Would the project:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No one could reasonably argue that the installation of controlled traffic signaling at the on/off-ramp intersections at SR82 would not increase perceived pedestrian and bicycle safety unless consideration is given to existing conditions whereby there is no indication: --- 1) that accidents and injuries involving pedestrians and/or bicyclists have occurred and been documented;

1

## Public Comment 7 (Page 2 of 3):

#7

Comment received from Pat Giorni (Page 2 of 3)

- 2) that no pedestrian and/or bicycle usage surveys have been presented that specifically identify the project locus, and/or document current pedestrian/bicycle behavior and movement strategies;
- 3) that especially with the release of significantly more vehicles on SR82 during timed sequences LOS will be decreased farther up/downstream of 17<sup>th</sup> and 20<sup>th</sup> Avenues then currently projected that will impact in-traffic bicycle maneuvers;
- 4) that as a living document and already initiated applicable plan (SR82/Broadway, Redwood City) the Grand Boulevard Initiative provides for on-street bicycle accommodation on ECR, despite the acknowledged current lack of facilities and accommodation noted in the City of San Mateo Bicycle and Pedestrian Plan, that is neither considered nor incorporated.

Although the checklist determination is *No Impact, a Less Than Significant with Mitigation* finding is warranted.

- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Full exploration of "the big picture" that is greater than simply providing all user safety at the called-out intersections is inadequate.

- 1) That as a living document and already initiated applicable plan (SR82/Broadway, Redwood City) the Grand Boulevard Initiative provides for on-street bicycle accommodation on ECR that is neither considered nor incorporated.
- 2) That no consideration is given to the Smart Corridor Plan already implemented by *City/County Association of Governments of San Mateo County* whereby decreased LOS on SR82 at the project locus or further up/downstream will severely impact all congestion management to include bicycle accommodation, especially those ramifications due to prolonged Smart Corridor operation on SR82 caused by a catastrophic event that closes US101.

Although the checklist determination is *No Impact, a Less Than Significant with Mitigation* finding is warranted.

- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

A dedicated right turn lane to access the on-ramps from SR82 to SR92 exponentially increases the risk of being "right hooked" or sideswiped to bicyclists who currently use the fog line demarcated shoulders where no parking is allowed as de facto bike lanes. Despite fast moving vehicles they are able to maneuver, most often using a hand signal, from the shoulder into the adjacent traffic lane which now is designated as a combined right turn and straight through. With this project the bicyclist will have to maneuver across the dedicated right turn lane to the through traffic lane in order to proceed.

- 1) Proposed cautionary signage placement without a short Class II Bike Lane and/or sharrow installation is inadequate to safeguard bicyclist trans-lane movement.

Although the checklist determination is *No Impact, a Less Than Significant with Mitigation* finding is warranted.

## Public Comment 7 (Page 3 of 3):



Comment received from Pat Giorni (Page 3 of 3)

### XVIII. MANDATORY FINDINGS OF SIGNIFICANCE (Pg. 133):

- b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

This project encompasses a major portion of roadway that is incorporated into the Grand Boulevard Initiative. Any increase in LOS and/or greater vehicle volume that the SR 92-82 Interchange Improvement Project brings to the ECR in the short term will make it increasingly more difficult in future to implement Bus Rapid Transit, on-street bicycle accommodation, and wider pedestrian and ADA friendly sidewalks with the necessary traffic lanes reduction required.

--- 1) As a living document and already initiated applicable plan (SR82/Broadway, Redwood City) the Grand Boulevard Initiative provides for Bus Rapid Transit, on-street bicycle accommodation, and wider pedestrian and ADA friendly sidewalks on ECR that is neither considered nor incorporated.

Although the checklist determination is *No Impact*, a Potentially Significant Impact finding is warranted.

- c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The completed San Mateo County border to border US101 Auxiliary Lane Project, designed and constructed to alleviate freeway congestion, has done little more than encourage greater vehicular usage that approaches yet another saturation point. Although the intent of the SR 92-82 Interchange Improvement Project is to provide a solution to keep the traffic moving it, too, is doomed to fail because just as nature abhors a vacuum, the "Build it and they will come" single-driver mindset just moves the pressure from one pinch point to another. The elephant in the room is the obvious fact that there is no real incentive to deviate from "convenient" single-driver transit behavior if our only concrete solution is to continue to widen the roads. But that is an argument to be made in another venue.

--- 1) The direct substantial adverse effect on human beings is the degradation of air quality to waiting pedestrians stalled for at least 2 minutes in the epicenter of a virtual parking lot where concentrations of gasoline emissions may be at least 10 times greater than with current existent conditions while everyone awaits traffic signal controller phase allowance for movement.

--- 2) The direct substantial adverse effect on human beings is the degradation of air quality to bicycle riders with their noses 3 feet above tailpipes traveling on a significantly more heavily trafficked road than with current existent conditions.

Although the checklist determination is *No Impact*, a Potentially Significant Impact finding is warranted.

Thank you for your consideration. I await your response.

Pat Giorni 1445 Balboa Avenue Burlingame, Ca 94010 [hogorni@yahoo.com](mailto:hogorni@yahoo.com)

## **Caltrans Response to Public Comment 7:**

Thank you for your interest in the proposed project. Caltrans has received your comments and has the following responses:

The Build Alternative was thoroughly analyzed and the results produced adequately met the purpose and need (to reduce existing traffic congestion, bottlenecks, weaving and queue spillback at the interchange on and off ramps) of the proposed project.

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

- A minimum 8-foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.
- A Class II bike lane on SR 82 is also now planned between the ramp intersections that is 5-feet in width in each direction. The lane is adjacent to the sidewalk for the entire length of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles driving onto the on-ramps.
- Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the city. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

The proposed project would not cause a degradation of air quality and no mitigation is required or planned. The project complies with the national ambient air quality standards of the Clean Air Act. The standards are designed to be protective of health. The scope and traffic volumes resulting from the proposed project changes

would be smaller than similar projects within the region, which are in compliance with the Clean Air Act. In addition, the proposed project was included in a region-wide emissions model and was shown to comply with the standards of the Clean Air Act. Cumulative impact studies were not required for this project. The project did not analyze cumulative impacts because there were no significant impacts, per the CEQA checklist. The CEQA definition of cumulative impact comes from the Office of Planning and Research (OPR) and can be found in Section 15355 of OPR's CEQA Guidelines.

## Public Comment 8 (Page 1 of 2):

#8

Comment received from the Silicon Valley Bicycle Coalition (SVBC) (Page 1 of 2)



Promoting the bicycle for everyday use.

1922 The Alameda  
Suite 420  
San Jose, CA 95126

Tel 408.287.7259  
Fax 408.213.7559

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<http://bikesiliconvalley.org>

February 14, 2014

Caltrans District 4  
Attn: Yolanda Rivas  
PO Box 23660, MS 8B  
Oakland, CA 94623-0660

Re: SR 92-82 Interchange Improvement Project, Initial Study with  
Proposed Negative Declaration

Dear Ms. Rivas:

Silicon Valley Bicycle Coalition (SVBC) is a membership-based organization working in Santa Clara and San Mateo Counties with the mission of promoting the bicycle for everyday use. I also sit on the Caltrans District 4 Bicycle Advisory Council (D4BAC), as well as the Caltrans State Bicycle Advisory Council (CBAC). We are writing to comment on the Proposed Negative Declaration for SR 92-82 Interchange Improvement Project and urge you to consider bicycle improvements in the planned redesign.

El Camino Real is a commute corridor for many bicyclists and it is a priority for SVBC to have it accommodate people on bikes better over time. Data indicates a high concentration of both bike usage and traffic incidents involving bicyclists on El Camino Real. The street should accommodate all modes, per Caltrans' own Complete Streets Policy, which charges the agency with considering the needs of all users. In addition, Caltrans and SVBC are active participants in the Grand Boulevard Initiative, which seeks to revitalize the El Camino Real corridor.

The interchange redesign addresses vehicle traffic and performance without taking into account bicycle and pedestrian safety. The Negative Declaration mentions that El Camino Real does not have bicycle facilities and is not planned to in the City of San Mateo's bicycle plan. However, this does not mean that there are not people who bike this corridor due to the many residential and commercial destinations on this main arterial. The planned improvements will reduce the collision points from four to two, but that is two too many. There is still the possibility that a bicyclist could be right-hooked as cars turn onto on-ramps. Ideally, Caltrans would include a bicycle pocket lane with green dashed blocks in conflict zones through the entire interchange area in both directions. This would provide a safe space for bicyclists that is more visible to motorists. Caltrans allowed the County of San Mateo to

**Public Comment 8 (Page 2 of 2):**

#8

---

Comment received from the SVBC (Page 2 of 2)

adopt a similar design on Alpine Road on Caltrans right of way in the vicinity of Highway 280.

In the future, we would like all projects involving highway crossings and El Camino Real in Santa Clara and San Mateo Counties to be taken up at the Caltrans District 4 BAC meeting. If this step had been taken, bike safety considerations would have been included earlier in the process. We urge Caltrans to consider bicycle safety in the plans to redesign this interchange, and would be happy to discuss this issue further.

Thank you for your consideration.

Sincerely,



Corinne Winter  
President and Executive Director

Cc:

Beth Thomas, Pedestrian and Bicycle Coordinator, Caltrans District 4  
Ken Chin, Project Manager, City of San Mateo

## **Caltrans Response to Public Comment 8:**

Thank you for your comment and interest in the proposed project.

This project was reviewed by the Bicycle and Pedestrian Branch Chief and various staff, however was not reviewed by D4BAC. Caltrans is taking all the steps necessary to ensure that all future projects are reviewed by the Caltrans District 4 Bicycle Advisory Council (D4BAC).

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

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- A Class II bike lane on SR 82 is also now planned between the ramp intersections that is 5-feet in width in each direction. The lane is adjacent to the sidewalk for the entire length of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles driving onto the on-ramps.
- Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the city. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

## Public Comment 9:

#9

Comment received from John Langbein

**Romaya, Leahnora@DOT**

---

**From:** John Langbein [john\_langbein@yahoo.com]  
**Sent:** Thursday, February 13, 2014 1:57 PM  
**To:** Romaya, Leahnora@DOT  
**Subject:** Fw: RT 92/82 Project

Perhaps this email should have been sent to you rather than Ms. Navarro.

John Langbein

----- Forwarded Message -----

**From:** John Langbein <[john\\_langbein@yahoo.com](mailto:john_langbein@yahoo.com)>  
**To:** "[gidget.navarro@dot.ca.gov](mailto:gidget.navarro@dot.ca.gov)" <[gidget.navarro@dot.ca.gov](mailto:gidget.navarro@dot.ca.gov)>  
**Cc:** "Thomas Beth@DOT" <[beth.thomas@dot.ca.gov](mailto:beth.thomas@dot.ca.gov)>  
**Sent:** Sunday, February 9, 2014 8:04 PM  
**Subject:** RT 92/82 Project

I have looked at sketch provided on the Caltrans Website concerning the proposed RT82/92 interchange project. I have a few concerns about providing safe bicycle access to El Camino Real (RT82).

The proposed configuration of the entrance/exist ramps as they intersect RT 82 are better than the current configuration because the intersections are "squared-off". However, I am concerned that the radius of these turns are still much too large allowing motorists to make the turns at relatively high-speeds where there are pedestrians and cyclists trying to continue straight on RT82. The radius needs to be reduced at all 4 "intersections" for better accommodation of non-motorized users; this would be more consistent with the "Complete Streets" or DD-64 that Caltrans claims to follow.

It should be noted that, although El Camino does not have any formal bicycling facility, this route is used by cyclists as can provide direct links to their destinations.

I am curious why Caltrans is trying to avoid the public process usually involved with a "Proposed Negative Declaration", where other projects of similar scale, Willow RD and RT101, and Holly and RT 101, have had extensive public review.

John Langbein

### **Caltrans Response to Public Comment 9:**

Thank you for your comment and interest in the proposed project.

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

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Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: Project Development Team (PDT) meetings, interagency coordination meetings and public environmental scoping meetings.

A open house by Caltrans at San Mateo City Hall was held on January 29, 2014, from 5:30 PM to 8:30 PM. The information presented was to outline the environmental process and to present the different design variations considered in the project.

Notices for the aforementioned meeting was published in the San Mateo Daily Journal on January 15, 2014. Additionally, announcements were posted on the Department's District 4 Twitter account on January 29, 2014 at <https://mobile.twitter.com/CaltransD4>.

Input from the public is always encouraged and please call or write to Department of Transportation, District 4 Office of Public Affairs, P.O. Box 23660, Oakland, CA 94623; (510) 286-4444 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711 at any time.

**Public Comment 10 (Page 1 of 4):**

#10

Comment received from Mark Eliot (Page 1 of 4)

February 14, 2014

Yolanda Rivas  
District Branch Chief  
Office of Environmental Analysis  
California Department of Transportation  
111 Grand Avenue  
Mail Station 88  
Oakland, CA

Re: SR 92-82 Interchange Improvement Project Initial Study/Negative Declaration

Dear Ms. Rivas,

The Initial Study for the 92-82 Interchange Project has several significant flaws that need to be corrected before the project continues.

**1. Goals Not Aligned**

As stated in the IS/ND, *"The purpose of this project is to increase performance at the on and off ramps and to address the secondary operation deficiencies on the SR 92 mainline. This would entail widening the existing ramps and reconfiguring the existing interchange from a full cloverleaf to a partial cloverleaf."*

There are two problems with this goal. First, it focuses on adding capacity for motor vehicles. Second, it fails to mention how any road users other than motorists will benefit from the project. State, regional, and local policies make clear that we will de-emphasize motor vehicle travel for environmental reasons and emphasize road designs that are safe and convenient for all users. Specifically:

- a. AB1358 Complete Streets Act of 2008. "... routine accommodation of all users of the roadway, including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation."
- b. Caltrans DD-64-R1. "The intent of this directive is to ensure that travelers of all ages and abilities can move safely and efficiently along and across a network of complete streets." and "Ensure incorporation of bicycle, pedestrian, and transit travel elements in all Department transportation plans and studies."
- c. MTC Transportation 2035. "... aims to stimulate the use of public transit, increase the safety, utility and appeal of bicycling and walking, and reduce miles traveled and emissions by cars and trucks in the Bay Area while increasing the efficiency of the roadway and transit systems for all users."

## Public Comment 10 (Page 2 of 4):

#10

Comment received from Mark Eliot (Page 2 of 4)

d. San Mateo General Plan. *"The City is striving toward making it convenient for many residents to travel to work, obtain services, shop, recreate, and travel to school without always using single occupant vehicle trips. To support that end the Circulation Element focuses on human mobility such as public transit, bikeways, pedestrian routes, roadways, and parking facilities."*

e. San Mateo Sustainability Initiatives Plan. *"Increase mode share for pedestrian and bicycle travel to 30% for trips of one mile or less by 2020." and "Reduce single occupant automobile usage for trips less than 5 miles in length by 20% by 2020."*

f. Grand Boulevard Initiative Multimodal Access Strategy. *"Create space within the right-of-way to accommodate multiple travel modes." and "Provide the facilities needed to promote multimodal travel." and "Provide a greater frequency of signalized pedestrian crossings." and "Maximum distance between signalized crossings in Link areas of 1,320 feet (1/4 mile)."*

In short, the purpose of this project does not align with the goals of the city, region, and state. It is really about increasing capacity for automobiles and fitting in pedestrian and bicycling facilities where they do not interfere with automobile level-of-service. The purpose of this project needs to be re-examined.

### 2. Alternatives Not Considered

As stated in the IS/ND, *"Nine alternatives were studied for this project including the No-Build alternative and Partial Cloverleaf Interchange alternative. Eight of the alternatives were rejected because they did not meet the purpose and need or were not within the scope of the project."* If the purpose and scope are changed to accommodate all road users for the reasons discussed above, there are several other options to consider. All of these will probably work within the Partial Cloverleaf with compromises.

El Camino Real between 17th and 20th Avenues is currently inhospitable to pedestrians and bicyclists. It is more of a barrier than facilitator for any travel other than by automobile. It has narrow sidewalks, dangerous on- and off-ramp crossings, and no perpendicular crossings at all. Bicyclists must either ride in the right lane potentially impeding automobile traffic, ride on a narrow shoulder which is equally dangerous, or ride on the sidewalk. Even given this situation, people still choose to walk and cycle on El Camino because it is direct and centrally located, but they do so at risk.

The proposed alternative does include a signalized crossing of new highway on- and off-ramps for pedestrians. This is an improvement. However there are no other substantive improvements. The proposed pocket lane for bicyclists is actually not an improvement by itself because it is isolated from any other facilities — it must be connected to a complete lane system to provide any safety improvement.

Some options to improve pedestrian and bicycle travel include:

## Public Comment 10 (Page 3 of 4):

#10

Comment received from Mark Eliot (Page 3 of 4)

- a. Crosswalks. Add crosswalks at the signalized intersections to allow pedestrians to cross El Camino Real (not just the on- and off-ramps). This gives pedestrians more opportunities to cross than those at 17th and 20th, which are over 1/3 mile apart. Signals can be timed to favor traffic on El Camino Real when there are no pedestrians ready to cross and favor pedestrians when they are waiting (i.e. by pressing a call button). This may affect traffic throughput at times, but will increase pedestrian convenience and safety.
- b. Bike Lanes. Add Class 2 bike lanes on the far right in both directions on El Camino Real between the proposed intersections. Transition these lanes with dashed lanes to the proposed pocket lane before they reach the intersections. This will require reallocating lane space on the left and shoulder space on the right to create the bike lane. Narrowing and/or moving these traffic lanes may affect traffic throughput, but is absolutely required for bicycling safety.
- c. Shared Path. The alternative to bike lanes is to create a shared path. Widen the current sidewalk by using existing shoulder space and by narrowing and/or realigning traffic lanes. The shared path would accommodate both pedestrians and cyclists. Include ramps to the shared path for cyclists transitioning from the right lane before the intersection to the path after the intersection. In fact, many cyclists already ride on the current sidewalk for obvious reasons but risk conflict with pedestrians due to the sidewalk's width. See the attached photo taken yesterday afternoon of two men riding their bikes on the sidewalk.

The currently proposed alternative is a one of many design standards that Caltrans has applied for decades. It is an anachronism that does not reflect today's requirements. Caltrans was roundly criticized in a recent independent review by the State Smart Transportation Initiative (University of Wisconsin) for an over-reliance on processes rather than outcomes and for following established standards "slavishly". As currently proposed, this project is a prime example.

Highway interchanges are rarely redesigned. As a San Mateo resident and someone who regularly walks and bikes on El Camino Real, I will have to live with whatever changes are implemented for a very long time. This project either is an opportunity for Caltrans to show that it really understands and embraces modern policies or will become monument to business-as-usual. I want to walk and ride my bike safely through this interchange. When I look at four traffic lanes and a five-foot unused asphalt shoulder (see attached photo), I think that there must be a way to better accommodate pedestrians and cyclists. I do not want people to look at this interchange in the future and say "What were they thinking?" Instead, I want people to say "They got it right."

**Public Comment 10 (Page 4 of 4):**

#1C

Comment received from Mark Eliot (Page 4 of 4)

Sincerely,

Mark Eliot  
4020 Bayview Ave  
San Mateo, CA 94403

cc: Jerry Hill, California State Senator  
Gidget Navarro, Caltrans  
Leahnora Romaya, Caltrans  
Beth Thomas, Caltrans  
Susanna Chan, City of San Mateo  
Ken Chin, City of San Mateo



## Caltrans Response to Public Comment 10:

Thank you for your comment and interest in the proposed project.

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

- A minimum 8-foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.
- A Class II bike lane on SR 82 is also now planned between the ramp intersections that is 5-feet in width in each direction. The lane is adjacent to the sidewalk for the entire length of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles driving onto the on-ramps.
- Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the city. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

## Public Comment 11:

#11

Comment received from Kara Cox

Dear Ms. Romaya,

I am writing out of concern over the proposed alterations to the State Route 92-82 interchange. As a long term San Mateo resident, I am aware of the importance of the route as well as its current downfalls in terms of crowding and backups for motor vehicles. However, the proposed modifications fail to make any improvement in how bicyclists navigate North/South on 82, a consideration required under state law.

In 2008, our state adopted AB 1358. This legislation necessitates cities and counties plan for multi-modal transportation networks amidst any substantive revision to their circulation elements. The project under consideration at the 92-82 interchange certainly qualifies as substantive, however it fails to comply with the standards AB 1358 sets. Making El Camino bike friendly is the single best way to encourage cycling as viable transportation option on the Peninsula. Designated bike lanes painted in green is the best means of keeping cyclists safe, and should be incorporated into the 92-82 interchange improvement plan.

Until citizens are given a safe option for cycling in key circulation arteries we will not be able to reduce vehicle travel locally. Not only would I enjoy feeling safe riding my bike on El Camino, I would like to feel safe riding with my son. Under the proposed 'improvement' plan, this will remain impossible.

Kind regards,

Kara Cox  
Co-leader of San Mateo Cool Cities, a local Sierra Club advocacy group

### **Caltrans Response to Public Comment 11:**

Thank you for your comment and interest in the proposed project.

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

- A minimum 8-foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.
- A Class II bike lane on SR 82 is also now planned between the ramp intersections that is 5-feet in width in each direction. The lane is adjacent to the sidewalk for the entire length of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles onto the on-ramps.
- Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the city. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

Public Comment 12:

Comment received from Andrew J. Conway Jr.

#12



From the desk of

Andrew J. Conway Jr.

When you come  
off the freeway  
onto the El Camino  
going south; the  
road has to be  
repaired.

I've driven on  
better roads in  
Japan and Korea  
in 1953

A handwritten signature in black ink, appearing to read 'Andrew J. Conway Jr.', is written below the text. The signature is stylized and includes a long horizontal flourish at the bottom.

16. Since 1949, how many USF athletic teams have won national championships, and in what sports? [Please see answer key on last page.]

**Caltrans Response to Public Comment 12:**

Caltrans has received your comment and we acknowledge that existing conditions of SR 82 need some repairs. The proposed project will include re-paving SR 82 during the construction phase and thus should address your concern.

### Public Comment 13:

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**From:** Tom Blake [mailto:tomblake@gmail.com]  
**Sent:** Sunday, February 09, 2014 9:02 PM  
**To:** Navarro, Gidget R@DOT  
**Subject:** HW 92-82 interchange improvement

Dear Ms. Navarro,

I wish to add to the public comment for the proposed HW 92-82 interchange improvement project. I live near this intersection and want to know what the project does not address the short merge between the 82 north to 92 east onramp. As I'm sure you are aware, the Delaware St. exit has an extremely short merge off of 92 east which is part of a side line that serves as the 82 northbound to 92 eastbound onramp. That intersection often causes 'weaving' because of the short merge which drives down 92 eastbound traffic speeds and appears to cause traffic collision close calls.

Has anyone studied the impact of this merge on 92 highway traffic speeds and collisions? Wouldn't the elimination of the northbound 82 to 92 eastbound onramp be better suited? Under the proposed project, there will be an onramp to 92 east for 82 southbound traffic. Why can't this onramp also serve 82 northbound traffic, especially since there will already be a new signal installed there? Wouldn't that give the onramp traffic more room to merge on to 92 east before the Delaware exit?

Thanks,  
Tom Blake  
(a concerned resident)

**Caltrans Response to Public Comment 13:**

Caltrans has received your comments on the proposed project and has the following responses:

Under existing conditions, approximately 660 vehicles per hour use the northbound El Camino Real to eastbound SR 92 on-ramp. This number is expected to increase to over 800 per hour by 2038. If the northbound diagonal on-ramp is removed, and instead this traffic turns left onto the eastbound loop on-ramp, two left-turn lanes would be required. The existing right-of-way is not wide enough to accommodate these additional lanes. An additional signal phase would also be required to allow left-turns, which would increase overall delay of the signal. For these reasons, the proposed project will not remove the diagonal on-ramp.

## Public Comment 14 (Page 1 of 3):

Comment received from Dino and Cindy Antoniazzi (Page 1 of 3)

#14

**From:** [Bottari, Scott@DOT](mailto:Bottari,Scott@DOT)  
**To:** [Romaya, Leahnora@DOT](mailto:Romaya,Leahnora@DOT);  
**Subject:** FW: 92-82 Interchange Improvement Project ....public comment  
**Date:** Thursday, February 20, 2014 10:01:54 AM

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Hi Leahnora,

Email "Public Comment" below, in case you have not received it.

-Scott

Scott Bottari  
Landscape Architect  
Caltrans, District 04  
Oakland, CA  
510-286-5955

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**From:** Cindy Antoniazzi [mailto:Cindya.buyavonhere@comcast.net]  
**Sent:** Saturday, February 15, 2014 3:53 PM  
**To:** Bottari, Scott@DOT  
**Subject:** Fwd: 92-82 Interchange Improvement Project

Dear Scott,

It was nice meeting you at the Open House -Informational Meeting for the 92-82 Interchange. I was the person who planted all the tall trees in the Caltrans right of way, 20 years ago, to hide the off ramp when I moved into our house. As you may remember, my wife and I talked to you about our concerns about the landscaping plan for the 1700 block of Ivy Street off ramp area. As the design process moves ahead, hopefully we will be able to meet on site with you to discuss types and placements of the new trees and landscaping.

Looking forward to working closely with you for the next couple of years as the project moves forward. Hope all is well with you and your family.

Below is a copy of the email that we sent to Yolanda Rivas expressing our comments and concerns.

## Public Comment 14 (Page 2 of 3):

Comment received from Dino and Cindy Antoniazzi (Page 2 of 3)

#1.

Best regards,

Dino and Cindy Antoniazzi  
1740 Ivy Street  
San Mateo  
650-341-3047  
Begin forwarded message:

**From:** Cindy Antoniazzi <[Cindya.buyavonhere@comcast.net](mailto:Cindya.buyavonhere@comcast.net)>  
**Subject:** 92-82 Interchange Improvement Project  
**Date:** February 15, 2014 3:38:06 PM PST  
**To:** [Yolanda.Rivas@dot.ca.gov](mailto:Yolanda.Rivas@dot.ca.gov)

Ms. Rivas,

We are writing to address the issues that we foresee in the Improvement Project for the 92-82 Interchange. We are homeowners on the 1700 block of Ivy Street, which is adjacent to the off ramp for Northbound 82 and the on ramp for Westbound 92.

Our concerns are:

1. The removal of mature oak trees and other mature landscaping that hide the current off ramp and also hide the view of vehicles. The new roadway would come within 60 feet of existing residential homes.
2. The new retaining wall that will be installed needs to be architecturally and visually beautiful because it faces houses worth \$1,000,000 in this specific residential neighborhood.

These are major concerns that if not addressed, will devalue the homes in the neighborhood. Not only that, but many of our neighbors windows face the offramp and it will be visually unsightly to constantly have a view of 4 lanes of traffic while sitting in their living rooms or dining rooms.

To address these concerns, landscaping is of the utmost importance. We need mature, fast growing specimen trees that resemble those that are in the neighborhood, that will provide the screening which is required in order to obstruct the view of the traffic.

Hopefully as the design process progresses, the neighbors will be kept

**Public Comment 14 (Page 3 of 3):**

Comment received from Dino and Cindy Antoniazzi (Page 3 of 3)

informed as to what the proposed design of the wall will look like in addition to any landscape choices.

Another major concern of the neighbors is that Caltrans normally does their work at nighttime. We lived through the last time they repaved 92 and it started at 11pm and went until 5am...which, needless to say, had a major effect on our sleep. It was the worst 2 weeks for all of the neighbors... So we would hope, that they will figure out a way to do the majority of the work during the daytime...as we will hear ALL of the noise from all of the off ramps, not just the one by our house. The noise here carries from El Camino to our neighborhood so all of the heavy equipment noise will be heard here constantly. Not only that, but it would appear that most of the construction vehicle will be going down Ivy street in order to access the new construction sites. And if this is a two year project, these concerns need to be addressed before the project begins.

We appreciate having the opportunity to voice these valid concerns and hope that we can work together to resolve any upcoming issues. If you have any questions, please feel free to call us at any time.

Sincerely,

Dino and Cindy Antoniazzi  
1740 Ivy Street  
San Mateo

650-341-3047

### **Caltrans Response to Public Comment 14:**

Thank you for attending the open house for the proposed project. Caltrans has prepared the following response to your comment:

The removal of existing large mature trees, including oak trees, will be kept to only where necessary to accommodate the projects construction elements. In particular, the removal of existing trees and plants, located on the outer road edges of the on-ramps and off-ramps will be kept to a minimum.

Construction methods that minimize tree removal will be utilized. Examples include: deploy construction equipment from above planned retaining walls, rather than below retaining walls and use standard Caltrans Retaining Wall-Type 5, which has no footing in front of face of wall.

The existing trees and plantings of the interchange will be identified and quantified in detail, including those that exist just outside Caltrans right-of-way.

Architectural treatment (texture, pattern, and color) will be applied to visible surfaces of retaining walls, including the walls facing Ivy St. The proposed design can be shown to any interested residents by contacting the Caltrans Office of Landscape Architecture.

Caltrans proposes to plant new tree and shrub species that will provide a visual screen to the residences, screening from the highway ramps and mainline traffic. The species will be similar to those removed, drought tolerant, attractive and fast growing.

As the project moves closer to the follow up landscape contract, the landscape plan can be shown to any interested persons.

Public Comment 15:

Comment received from Tim Jad

#1

**QUESTIONS / COMMENTS**

Project 92/82 Interchange Date 1/29/14 Location S.M. City Hall

Name (Please Print) Tim Jad Phone/Fax 650 200 3499

Company \_\_\_\_\_

Address 1597 Yew St. city San Mateo state CA zip code 94402

Comments: I am in support of the proposed design.  
Thank you very much.



For additional comments use reverse side.

**Caltrans Response to Public Comment 15:**

Thank you for attending the open house for the proposed project. We acknowledge your support of the project.

Public Comment 16:

Comment received from Edith Cabuslay

#16

QUESTIONS / COMMENTS

Project SR92 - El Camino Interchange Date 1/29/14 Location San Mateo

Name (Please Print) Edith Cabuslay Phone/Fax 650 571 5277

Company \_\_\_\_\_

Address 1215 Dix Street city San Mateo state CA zip code 94401

Comments: Thank you for coming up with a design that will make this intersection safer for pedestrians + bicyclists. If it is done so the signal lights up/down ECR are coordinated, it should improve the flow of traffic immensely. Also it will improve the W-92 offramps to N-ECR.



For additional comments use reverse side.

**Caltrans Response to Public Comment 16:**

Caltrans has received your comments on the proposed project. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections.

Public Comment 17:

Comment received from Richard Ho

#17

**QUESTIONS / COMMENTS**

Project SR 92-82 Date 1/29/14 Location San Mateo  
Name (Please Print) RICHARD HO Phone/Fax rhhosm@yahoo.com  
Company self  
Address 1247 Alameda de las Pulgas city San Mateo state CA zip code 94402

Comments: Please make landscaping draught resistant.



For additional comments use reverse side.

**Caltrans Response to Public Comment 17:**

Thank you for attending the open house for the proposed project. The project landscape design plan will be based upon drought tolerant principles, namely low-water irrigation (drip) and use of drought tolerant and California native plant species. Even in periods of drought or any water supply disturbance, the objective is for the planting to survive, just as native plants survive drought in natural settings.

Public Comment 18:

Comment received from D. Harris

#18

QUESTIONS / COMMENTS

Project 92/ECR INTERCHANGE Date 7/28/14 Location SAN MATEO, CA  
Name (Please Print) D. HARRIS Phone/Fax 650 573-9648  
Company RESIDENT  
Address 70 McLELLAN AVE city SAN MATEO state CA zip code 94423  
Comments: Synchronizing intersection lights at 17<sup>TH</sup>, 92,  
& 20<sup>TH</sup> AVE for ECR TRAFFIC FLOW

IMPROVEMENTS SEEM SHORT SIGHTED FOR INCREASED  
VEHICLE EXPECTANCY DUE TO BUILDING PROJECTS  
IN THE WORKS AND THOSE YET TO COME IN THE VERY  
NEAR FUTURE



For additional comments use reverse side.

**Caltrans Response to Public Comment 18:**

Caltrans has received your comments on the proposed project and has the following responses:

The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections.

The proposed project was analyzed using traffic forecasts for the near-term open to traffic year (2018) and long-term design year (2038). Traffic forecasts are generated using the regional travel demand model and are based on the city's general plan and county assessor data to account for future development projects.

**Public Comment 19:**

Comment received from Nicole P. Lynn

#19

**QUESTIONS / COMMENTS**

Project SR 92-82 Interchange Date 1.29.14 Location S.M. City Hall

Name (Please Print) Nicole P. Lynn Phone/Fax 650.344.6640

Company \_\_\_\_\_

Address 935 S. Humboldt St. city San Mateo state CA zip code 94402

Comments: I am VERY concerned that after construction, the landscaping (full) won't be done immediately thereafter. Funds for projects like landscaping are TOO easily cut when the agencies involved or the city/county/state have run out of money or are squeezed for the same. I absolutely do not want to be left looking at a mud pit (which is what it will be after construction equipment destroys/kills the current vegetation) for years or end until DB becomes available. An absolute commitment has to be made to fully fund the entirety of the project including landscaping.



For additional comments use reverse side.

CUER

I am also concerned that particularly in rush hour traffic will still stack up onto SR 92, despite the multiple lanes at the bottom of the off-ramp. There is the same configuration (as the one proposed) at Hwy 380 to El Camino (North) near Tamboan. During rush hour traffic back up onto 380. The only way to alleviate such an occurrence at 92-82 is for a continuous green light at ECR - an unrealistic expectation because of traffic on ECR.

Moreover one of the project personnel made the point that this interchange will go from an "F" rating to a "C" rating. A "C" will very quickly devolve once again to an "F" due to the extensive construction of high density housing/office space being undertaken in the area. Though the dwellings are TOD, the residents will still have a minimum of one, if not two cars per household. Those cars will be using and clogging 92-82 very quickly. Given the relatively short period of time in which this will occur how will the agencies address the issue? What additional measures would be taken? What additional construction undertaken? Can those things be done, planned for now rather than later? Short-term solutions should not be entertained. A real commitment to solving the long-term problems, ~~not~~ which will crop up relatively soon, should be employed.

Another issue (and I'm not sure what can be done/changed) is the fact that motorists on ECR will have to make additional stops (due to added stoplights) which means more pollution, worse gas mileage, more fuel consumption, when we are trying to be more environmentally friendly.

### **Caltrans Response to Public Comment 19:**

Caltrans has received your comments on the proposed project and has the following responses:

The traffic analysis considered both near-term (2018) and long-term (2038) traffic forecasts to account for the increase in traffic. As shown on page 52 of the Draft Initial Study with Proposed Negative Declaration, the westbound SR 92 ramp intersection would continue to operate at Level of Service C in 2038. The operational analysis also concluded that vehicle queues would not exceed the storage length on the westbound off-ramp and would not spill back to SR 92 in 2038 during the peak hours.

As described above, the proposed project was analyzed using traffic forecasts for the near-term open to traffic year (2018) and long-term design year (2038). Traffic forecasts are generated using the regional travel demand model and include land use information from the city's general plan and county assessor data to account for future development projects.

The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

Public Comment 20:

Comment received from Diana C. Pettit

#20

QUESTIONS / COMMENTS

Project SR 92/82 Interchange Date 1/29/2013 Location San Mateo

Name (Please Print) DIANA C. PETTIT Phone/Fax 650 2450180

Company

Address 221 S. FREMONT ST #208 city San Mateo state CA zip code 94401

1) Comments: Pedestrian/Bike: ON EL CAMINO BETWEEN 17th/20th Avenue the pedestrians and Bike Traffic Do better to have a Bridge over or under 92. NOT to drive along side of street traffic !!

2) Backup going from 92 W to 92 E (San Mateo Bridge) becomes backed up between 4:30 pm - 6:30 pm (M-F) due to excessive traffic merging onto 92 from 101 N and 101 S. ON and off ramps are much better access but they don't cause 92 W + E to slow. The traffic lights at

17 AVE + EL CAMINO, ~~this~~ **Caltrans** this causes Backup on N. EL CAMINO from 101 N off ramp to 92 E. I know corridor crosses railroad but what about Delaware N+S exit?

For additional comments use reverse side.

## **Caltrans Response to Public Comment 20:**

Thank you for your comment and interest in the proposed project.

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

- A minimum 8-foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.
- A Class II bike lane on SR 82 is also now planned between the ramp intersections that is 5-feet in width in each direction. The lane is adjacent to the sidewalk for the entire length of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles onto the on-ramps.
- Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the city. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

Public Comment 21:

Comment received from Enrique Diaz

#21

QUESTIONS / COMMENTS

Project State Route 92-82 Interchange improvement project Date 1/29/14 Location City Hall of San Mateo

Name (Please Print) Enrique Diaz Phone/Fax \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: The project looks nice but in reality does not really help me, a resident of San Mateo, who commutes daily on 92. The bottleneck I experience going Westbound on 92 is the back-up on 92 to get onto 101. Bottom line is the improvement is only for 92 - not fixing the problem of added traffic on 82 or on 92 where it connects with 101.



For additional comments use reverse side.

**Caltrans Response to Public Comment 21:**

Thank you for your comment and for attending the open house on January 29, 2014. The purpose of the proposed project is to reduce existing traffic congestion, bottlenecks, weaving and queue spillback at the interchange's on- and off- ramps. The Traffic Operations Analysis Report (TOAR) for the proposed project analyzed feasible alternatives and determined that the partial cloverleaf design would best serve the purpose.

The US 101/ SR 92 Interchange is not in the scope of this project's work, however improvements are planned in a separate project in the future.

Public Comment 22:

Comment received from Tom Elliott

#22

**QUESTIONS / COMMENTS**

Project SR 92/82 Interchange Date 01-28-14 Location San Mateo  
Name (Please Print) Tom Elliott Email ycamtom@astound.net  
Phone/Fax \_\_\_\_\_

Company ---

Address 128A N Kingston St. San Mateo state CA zip code 94401

Comments: The 92/82 cloverleaf seems functional as planned.  
★ Where SR 92 Eastbound (over CalTrain tracks)  
the bridge must be widened one lane to  
allow Eastbound traffic from SR 82 to exit  
to Delaware, without contending ~~without~~  
with exiting traffic from SR 92.



For additional comments use reverse side.

**Caltrans Response to Public Comment 22:**

Thank you for attending the open house for the proposed project. In response to your comment, the Delaware Avenue exit ramp and the bridge over the railroad track are not in the scope of the project. However, this could be considered by Caltrans in future widening projects of SR 92.

Public Comment 23:

#23

Comment received from Howard Friedman

**COMMENT CARD**

Name (Please Print) Howard Friedman

Address (Home) 1951 O'Farrell St. #314 city San Mateo state CA zip code 94403

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: Please consider keeping the 92 westbound off ramp  
going south on 82 - it seems as if this would  
loop to improve flow of vehicles going westbound on the  
92 and exiting onto southbound 82. Otherwise all  
westbound 92 cars that want to go onto 82 have to only  
one exit. Again, flow gets impacted fairly significantly

 For more comments see reverse side.

**Caltrans Response to Public Comment 23:**

Caltrans has received your comments on the proposed project and has the following responses:

Maintaining the existing westbound SR 92 loop off-ramp to southbound El Camino Real was considered. The project is including the removal of the loop ramp in the final proposed alternative for the following reasons:

Removal of the loop off-ramp is critical to removing the short weave between the loop on-ramp and loop off-ramp which results in a high speed differential between through traffic on SR 92 and traffic entering/exiting at El Camino Real. The loop on-ramp from northbound El Camino Real to westbound SR 92 can not be removed as that would require northbound traffic to turn left onto the on-ramp. There is insufficient space under the existing overpass to provide adequate left-turn lanes.

The operational analysis shows that the project improves operations at El Camino Real with a single off-ramp as shown on pages 47 and 49 during the AM and PM peak hours respectively.

Public Comment 24:

#24

Comment received from Emitt Wallace

**COMMENT CARD**

Name (Please Print) EMITT WALLACE

Address (Home) 1951 O'FARRELL ST. #102 city SAN MATEO state CA zip code 94403

Authorized Representative (Name of organization or agency) HOMEOWNER

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: PLEASE USE ALL AVAILABLE RESOURCES TO  
MAKE IT EASIER FOR PEDESTRIANS TO USE THE  
92 UNDERCROSSING. PEDESTRIANS HAVE A  
DIFFICULT TIME USING THE CURRENT  
UNDERCROSSING.

 For more comments use reverse side.

### **Caltrans Response to Public Comment 24:**

Thank you for your comment and interest in the proposed project.

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

- A minimum 8- foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.

Public Comment 25:

#

Comment received from Emitt Wallace

**COMMENT CARD**

Name (Please Print) EMITT WALLACE

Address (Home) 1951 O'FARRELL ST #102 city SAN MATEO state CA zip code 94403

Authorized Representative (Name of organization or agency) HOMEOWNER

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: TO PREVENT SOUTH BOUND TRAFFIC CONGESTION ON EL CAMINO, YOU NEED TO ADD A DEDICATED RIGHT TURN LANE FROM SOUTH BOUND EL CAMINO TO WEST-BOUND 20TH ST.

 For more comments use reverse side.

**Caltrans Response to Public Comment 25:**

Your suggested improvement is a separate City of San Mateo sponsored widening project, which is currently in the design phase and will be constructed in the near future.

Public Comment 26:

#26

Comment received from Wesley Taoka

**COMMENT CARD**

Name (Please Print) WESLEY TAOKA

Address (Home) 15 SOUTH ELBORADO ST., city SAN MATEO state CA zip code 94401

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: How will the 2 extra traffic lights affect the flow of traffic on El Camino Real?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

 For more comments use reverse side.

**Caltrans Response to Public Comment 26:**

Caltrans has received your comments on the proposed project and has the following responses:

As shown on page 52 of the environmental document, the proposed signals at the off-ramps are expected to operate at acceptable Level of Service C or better under design year (2038) conditions. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

Public Comment 27:

#2

Comment received from Frank Markowitz

**COMMENT CARD**

Name (Please Print) Frank Markowitz

Address (Home) 3028 Monterey St. city San Mateo state CA zip code 94403

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: Support project generally. Would like high level of pedestrian safety and amenities (including No Right Turn on Red, improved lighting, definitely include ped. refuge islands)

 For more comments use reverse side.

## Department's Response to Public Comment 27:

Thank you for attending the open house and for your comment.

Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

- A minimum 8-foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.
- A Class II bike lane on SR 82 is also now planned between the ramp intersections that is 5-feet in width in each direction. The lane is adjacent to the sidewalk for the entire length of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles driving onto the on-ramps.
- Class III bicycle routes with shared lane markings are planned on Bovet Road and 18<sup>th</sup> Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the city. The proposed project would coordinate/synchronize the proposed signals on El Camino Real with existing signals at 17<sup>th</sup> Avenue/Bovet Road and 20<sup>th</sup> Avenue intersections. This would minimize stop and go conditions along El Camino Real with the additional two traffic signals.

Public Comments 28, 29:

Comment received from Bertha Sanchez

**COMMENT CARD**

Name (Please Print) BERTHA SANCHEZ

Address (Home) 15 N. EL DORADO ST. city SAN MATEO state CA zip code 94401

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: QUESTION  
#1) What sort of PROTECTION will BE IN PLACE  
FOR HOMES TO Right side of 92 offramp (going WEST)  
FROM ALL TRAFFIC NOISE or SOME ONE GOING TOO  
FAST + going off the ramp into backyards of Homes or  
BUSINESSES

#2 TRAFFIC COMING DOWN THE HILL (heading EAST) GO TOO

 For more comments use reverse side.  
TO BACK →

**COMMENT CARD**

Name (Please Print) BERTHA H. SANCHEZ

Address (Home) 15 NO. EL DORADO ST city SAN MATEO state \_\_\_\_\_ zip code 94401

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: QUESTION: TRAFFIC COMING DOWN THE (heading East)  
Hill usually exceed speed limit + often hard for  
vehicles entering 92 from ECR to merge into traffic  
\* Safely because of the short distance to merge.  
What can be done to slow traffic down for Safety Reasons

 For more comments use reverse side.

Public Comments 30, 31:

COMMENT RECEIVED FROM BERTHA SANCHEZ

**COMMENT CARD**

Name (Please Print) Bertha Sanchez

Address (Home) 15 N. EL Dorado ST city SM state \_\_\_\_\_ zip code 94401

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: IS There a Safer way for Pedestrian to cross  
off + on ramps from 92 to ECR? SUBMERGE  
Pedestrian crossing?

 For more comments use reverse side.

**COMMENT CARD**

Name (Please Print) BERTHA SANCHEZ

Address (Home) 15 NO. EL DORADO ST city SM state \_\_\_\_\_ zip code 94409

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: THERE IS A QUESTION OF AIR QUALITY FOR  
Residential housing. What is being done to  
protect new housing being develop on SOUTH Side  
of 92 - near SM City HALL

 For more comments use reverse side.

### **Caltrans Response to Public Comments 28, 29, 30, 31:**

Caltrans has received your comments on the proposed project and as the following responses:

#28: The proposed project applies the federal regulations for traffic noise abatement. Under the regulations, the traffic noise levels were not predicted to be high enough at this location to qualify for noise abatement, in the form of soundwalls. The project will incorporate safety features, in the form of safety barriers, to prevent vehicles from going off the ramp into the backyards of homes or businesses.

# 29: The proposed project would remove the eastbound SR 92 loop off-ramp to northbound El Camino Real, thus eliminating the weave between the two existing loop ramps. Additionally, the project would extend the merge distance for the southbound loop-on ramp to SR 92, allowing for additional acceleration distance for vehicles entering the freeway.

#30: Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility. Connecting to the existing network beyond the interchange, Caltrans is currently planning the following project elements that will be further refined in the design phase:

A minimum 8- foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks.

#31: The proposed project would not cause a degradation of air quality and no mitigation is required or planned. The project complies with the national ambient air quality standards of the Clean Air Act. The standards are designed to be protective of health. The scope and traffic volumes of the changes proposed by the project would be smaller than similar projects within the region, which are in compliance with the Clean Air Act. In addition, the proposed project was included in a region-wide emissions model and was shown to comply with the standards of the Clean Air Act.

Public Comments 32 33:

**COMMENT CARD**

Name (Please Print) CHRISTOPHER BROUSSEAU

Address (Home) 134 12TH AVE city SAN MATEO state CA zip code 94402

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: WHAT ARE THE ANTICIPATED TRAFFIC  
IMPACTS ON 16TH AVE AND PALM AVE  
AS A RESULT OF THIS PROJECT?

 For more comments use reverse side.

**COMMENT CARD**

Name (Please Print) CHRISTOPHER BROUSSEAU

Address (Home) 134 12TH AVE city SAN MATEO state CA zip code 94402

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: WILL ALL OVERHEAD UTILITIES IN THE  
PROJECT AREA BE UNDERGROUNDED, OR  
ELIMINATED AS PART OF THIS PROJECT?  
CURRENTLY, THERE ARE UTILITY LINES ON  
TELEPHONE POLES HANGING OVER HIGHWAY 92.

 For more comments use reverse side.

Public Comments 34 35:

**COMMENT CARD**

Name (Please Print) CHRISTOPHER BROUSSEAU

Address (Home) 134 12<sup>TH</sup> AVE city SAN MATEO state CA zip code 94402

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: I UNDERSTAND THAT POROUS PAVEMENT  
CAN SIGNIFICANTLY REDUCE TRAFFIC NOISE  
LEVELS - PLEASE INCORPORATE ~~THE~~ POROUS  
PAVEMENT THROUGHOUT THIS PROJECT TO  
REDUCE NOISE LEVELS IN THE NEIGHBORHOOD.

 For more comments use reverse side.

**COMMENT CARD**

Name (Please Print) CHRISTOPHER BROUSSEAU

Address (Home) 134 12<sup>TH</sup> AVE city SAN MATEO state CA zip code 94402

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: WILL PEDESTRIAN COUNTDOWN CLOCKS BE  
INSTALLED AT ALL PEDESTRIAN  
CROSSINGS AS PART OF THIS PROJECT?

 For more comments use reverse side.

Public Comments 36, 37:

**COMMENT CARD**

Name (Please Print) CHRISTOPHER BROUSSEAU

Address (Home) 134 12TH AVE city SAN MATEO state CA zip code 94402

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: PLEASE INCORPORATE EARTH BEAMS WHENEVER  
POSSIBLE TO DEFLECT + DISPENSE SOUND  
ENERGY, AND REDUCE NOISE LEVELS IN  
THE NEIGHBORHOOD.

 For more comments use reverse side.

**COMMENT CARD**

Name (Please Print) CHRISTOPHER BROUSSEAU

Address (Home) 134 12TH AVE city SAN MATEO state CA zip code 94402

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: PLEASE CONSIDER WIDENING THE BRIDGE ON  
EASTBOUND 92, TO ALLOW A MUCH  
LONGER MERGE WITH TRAFFIC ON 92 EAST AND  
CARS ENTERING 92E FROM EL CAMINO SOUTH

 For more comments use reverse side.

Public Comment 39:

**COMMENT CARD**

Name (Please Print) CHRISTOPHER Brousseau

Address (Home) 134 12<sup>TH</sup> AVE city SAN MATEO state CA zip code 94402

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: I UNDERSTANDS THAT SOUNDWALLS REDUCE TRAFFIC NOISE LEVELS - AND THAT ONLY ONE PART OF THIS PROJECT REQUIRES A SOUNDWALL UNDER FEDERAL REGULATIONS - HOWEVER, ~~I~~ PLEASE INCORPORATE SOUND WALLS ON ALL FOUR (OVER)

**Caltrans**

For more comments use reverse side.

(CONTINUED) .. ON/OFF RAMPS, TO FURTHER REDUCE NEIGHBORHOOD NOISE LEVELS.

### **Caltrans Response to Public Comments 32, 33, 34, 35, 36, 37, 38, 39:**

Caltrans has received your comments on the proposed project and as the following responses:

#32: Traffic impacts are not anticipated on the 16<sup>th</sup> Avenue and Palm Avenue as a result of this project.

#33: There are no overhead utilities in the proposed project vicinity.

#34: Porous pavement will be incorporated into the design elements where feasible.

#35: Crosswalks and pedestrian countdown signals are planned to be installed at all pedestrian crossings. Street lighting is planned for the safety of all users, which could include yellow flashing warning beacons. These safety devices significantly lower the chances of pedestrian crossing accidents. The project will also reconfigure the intersections such that the ramps meet SR 82 at right angles, which will slow turning vehicles. The proposed corner radii are the smallest that can be provided while still accommodating the turning movements of large commercial trucks. Safety for all users is the highest priority for Caltrans and the City of San Mateo. The project design shall apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, including pedestrians, appropriate to the function and context of the facility.

#36: We are not able to incorporate earthberms as a form of noise abatement because it is not feasible to construct one with enough height/width due to lack of space. Any form of noise abatement would need to be tall enough to break the line of sight from the resident to an 11-foot truck stack, and be continuous, without gaps. An earth berm would need to be sloped to make it structurally stable and would therefore require a footprint roughly four times its height. Because of this, even an earth berm as low as ten feet would need at least 40 feet of width to be constructible, which is not possible within the limited space of the project.

#37: Since the loop ramp on the southeast quadrant is eliminated in this project, the cars entering eastbound SR 92 from northbound SR 82 will have standard merge length per the Highway Design Manual standards.

#38: The project applies the federal regulations for traffic noise abatement. Under the regulations, the traffic noise levels were not predicted to be high enough at this location to qualify for noise abatement, in the form of soundwalls. In regards to vehicles leaving the ramp and entering private property, the project will incorporate safety features, in the form of safety barriers, to prevent this from happening.

#39: Plant materials or planted areas, evergreen or deciduous, do not provide measurable sound diffusing or reduction results. There is not sufficient space to provide effective noise abatement through vegetation, however planting will be included in the project as a visual screen, to the extent possible. The design

intention is to plant new tree and shrub species that will provide a visual screen to the residences from the highway ramps and mainline traffic.

**Comment Received from State Clearinghouse (Page 1 of 2):**



EDMUND G. BROWN JR.  
GOVERNOR

STATE OF CALIFORNIA  
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH  
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX  
DIRECTOR

February 18, 2014

Yolanda Rivas  
California Department of Transportation, District 4  
PO Box 23660  
Oakland, CA 94612

Subject: SR 92-82 Interchange Improvement Project  
SCH#: 2014012036

Dear Yolanda Rivas:

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. The review period closed on February 14, 2014, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

A handwritten signature in black ink that reads "Scott Morgan".

Scott Morgan  
Director, State Clearinghouse

## Comment Received from State Clearinghouse (Page 2 of 2):

### Document Details Report State Clearinghouse Data Base

**SCH#** 2014012036  
**Project Title** SR 92-82 Interchange Improvement Project  
**Lead Agency** Caltrans #4

---

**Type** **Neg** Negative Declaration  
**Description** Caltrans proposes to modify the State Route 82 and 92 interchange to reduce traffic congestion, bottlenecks, weaving and queuing spillback at the interchange on and off ramps.

---

#### Lead Agency Contact

**Name** Yolanda Rivas  
**Agency** California Department of Transportation, District 4  
**Phone** 510 286 6216 **Fax**  
**email**  
**Address** PO Box 23660  
**City** Oakland **State** CA **Zip** 94612

---

#### Project Location

**County** San Mateo  
**City** San Mateo  
**Region**  
**Lat / Long**  
**Cross Streets** SR 92 and 82 (El Camino Real)  
**Parcel No.**  
**Township**

	<b>Range</b>	<b>Section</b>	<b>Base</b>
--	--------------	----------------	-------------

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#### Proximity to:

**Highways**  
**Airports**  
**Railways**  
**Waterways**  
**Schools**  
**Land Use** Transportation Corridor

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**Project Issues** Aesthetic/Visual; Biological Resources; Geologic/Seismic; Noise; Traffic/Circulation; Water Quality

---

**Reviewing Agencies** Resources Agency; Department of Fish and Wildlife, Region 3; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Air Resources Board; Air Resources Board, Transportation Projects; Regional Water Quality Control Board, Region 2; Department of Toxic Substances Control; Native American Heritage Commission

---

**Date Received** 01/16/2014 **Start of Review** 01/16/2014 **End of Review** 02/14/2014

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The Honorable Richard Gordon  
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The Honorable Kevin Mullin  
State Assembly Member – 22<sup>nd</sup> District  
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James Earp, Commission Chair  
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Sacramento, CA 95814

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California Department of Parks and Recreation  
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San Mateo County Transportation Authority  
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United States Senate  
One Post Street, Suite 2450  
San Francisco, CA 94104

Mr. David Lim  
Mayor of San Mateo  
330 West 20<sup>th</sup> Avenue  
San Mateo, CA 94403

The Honorable Jerry Hill  
California State Senate  
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Chuck Armor, Regional Manager  
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Napa, CA 94588

California Highway Patrol  
Golden Gate Division  
9775 Golden Gate Drive  
Napa, CA 94559-9601

## CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) EVALUATION

### ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 9 for additional information.

<input checked="" type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry	<input type="checkbox"/>	Air Quality
<input type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Cultural Resources	<input checked="" type="checkbox"/>	Geology/Soils
<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Hazards and Hazardous Materials	<input type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input checked="" type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input checked="" type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Utilities/Service Systems	<input type="checkbox"/>	Mandatory Findings of Significance

On the basis of this initial evaluation:

<input checked="" type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a <b>NEGATIVE DECLARATION</b> will be prepared.
<input type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A <b>MITIGATED NEGATIVE DECLARATION</b> will be prepared.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an <b>ENVIRONMENTAL IMPACT REPORT</b> is required.
<input type="checkbox"/>	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An <b>ENVIRONMENTAL IMPACT REPORT</b> is required, but it must analyze only the effects that remain to be addressed.
<input type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR

or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required
---

Signature:	Date:
Printed Name:	For:

# Appendices

## Appendix A. CEQA Checklist

04-SM-SR 92/82

SR 92-11.2/11.2  
SR 82-10.3/10.7

23552

Dist.-Co.-Rte.

P.M/P.M.

E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<b>I. AESTHETICS:</b> Would the project:				
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially Significant Impact    Less Than Significant with Mitigation    Less Than Significant Impact    No Impact

**II. AGRICULTURE AND FOREST**

**RESOURCES:** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

**III. AIR QUALITY:** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
--------------------------------	---------------------------------------	------------------------------	-----------

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to substantial pollutant concentrations?

e) Create objectionable odors affecting a substantial number of people?

**IV. BIOLOGICAL RESOURCES:** Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

**V. CULTURAL RESOURCES:** Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of formal cemeteries?

**VI. GEOLOGY AND SOILS:** Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

**VII. GREENHOUSE GAS EMISSIONS:**

Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

**VIII. HAZARDS AND HAZARDOUS**

**MATERIALS:** Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**IX. HYDROLOGY AND WATER QUALITY:**

Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f) Otherwise substantially degrade water quality?

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

j) Inundation by seiche, tsunami, or mudflow

**X. LAND USE AND PLANNING:** Would the project:

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

**XI. MINERAL RESOURCES:** Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

**XII. NOISE:** Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

**XIII. POPULATION AND HOUSING:** Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**XIV. PUBLIC SERVICES:**

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Fire protection?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Police protection?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Schools?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Parks?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Other public facilities?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**XV. RECREATION:**

- a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
  
- b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

**XVI. TRANSPORTATION/TRAFFIC:** Would the project:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
  
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
  
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
  
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
  
- e) Result in inadequate emergency access?

f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

**XVII. UTILITIES AND SERVICE SYSTEMS:**

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with federal, state, and local statutes and regulations related to solid waste?

**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

- a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
- b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?
- c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

## **Appendix B – California Natural Diversity Database (CNDDDB)**

CNDDDB species occurrences within the nine USGS 7.5-minute topographic quadrangles around the project site (San Francisco South, Hunters Point, San Leandro, Montara Mountain, San Mateo, Redwood Point, Hal Moon Bay, Woodside and Palo Alto).

Species Name	Common Name	Status
<b>Animals</b>		
<i>Ambystoma californiense</i>	California tiger salamander	FT, ST
<i>Antrozous pallidus</i>	pallid bat	SSC
<i>Ardea herodias</i>	great blue heron	CDF_S
<i>Asio flammeus</i>	short-eared owl	SSC
<i>Athene cunicularia</i>	burrowing owl	SSC
<i>Callophrys mossii bayensis</i>	San Bruno elfin butterfly	FE
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	FT, SSC
<i>Circus cyaneus</i>	northern harrier	SSC
<i>Elanus leucurus</i>	white-tailed kite	CFP
<i>Emys marmorata</i>	western pond turtle	SSC
<i>Eucyclogobius newberryi</i>	tidewater goby	FE, SSC
<i>Euphydryas editha bayensis</i>	Bay checkerspot butterfly	FT
<i>Falco pregrinus anatum</i>	American peregrine falcon	SFP
<i>Geothlypis trichas sinuosa</i>	saltmarsh common yellowthroat	SSC
<i>Laterallus jamaicensis coturniculus</i>	California black rail	ST, SFP
<i>Melospiza melodia pusillula</i>	Alameda song sparrow	SSC
<i>Mylopharodon conocephalus</i>	hardhead	SSC
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat	SSC
<i>Nyctinomops macrotis</i>	big free-tailed bat	SSC
<i>Oncorhynchus mykiss irideus</i>	steelhead, central California coast distinct population segment	FT
<i>Plebejus icariodes missionensis</i>	Mission blue butterfly	FE
<i>Rallus longirostris obsoletus</i>	California clapper rail	FE, SE
<i>Rana draytonii</i>	California red-legged frog	FT, SSC
<i>Reithrodontomys raviventris</i>	salt-marsh harvest mouse	FE, SE, SFP
<i>Riparia riparia</i>	bank swallow	ST
<i>Rynchops niger</i>	black skimmer	SSC
<i>Sorex vagrans halicoetes</i>	salt-marsh wandering shrew	SSC
<i>Speyeria callippe callippe</i>	Callippe silverspot butterfly	FE
<i>Speyeria zerene myrtleae</i>	Myrtle's silverspot	FE

Species Name	Common Name	Status
<b>Animals (cont.)</b>		
<i>Stemula antillarum browni</i>	California least tern	FE, SE
<i>Scapanus latimanus parvus</i>	Alameda Island mole	SSC
<i>Taxidea taxus</i>	American badger	SSC
<i>Thamnophis sirtalis tetrataenia</i>	San Francisco garter snake	FE, SE, SFP
<b>Plants</b>		
<i>Acanthomintha duttonii</i>	San Mateo thornmint	FE, SE, CNPS
<i>Allium peninsulare</i> var. <i>franciscanum</i>	Franciscan onion	CNPS
<i>Amsinckia lunaris</i>	Bent-flowered fiddleneck	CNPS
<i>Arctostaphylos andersonii</i>	Anderson's manzanita	CNPS
<i>Arctostaphylos franciscana</i>	Franciscan manzanita	CNPS
<i>Arctostaphylos imbricata</i>	San Bruno Mountain manzanita	SE, CNPS
<i>Arctostaphylos montana</i> ssp. <i>ravenii</i>	Presidio manzanita	FE, SE, CNPS
<i>Arctostaphylos montaraensis</i>	Montara manzanita	CNPS
<i>Arctostaphylos pacifica</i>	Pacific manzanita	SE, CNPS
<i>Arctostaphylos regismontana</i>	Kings Mountain manzanita	CNPS
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	Coastal marsh milk-vetch	CNPS
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	CNPS
<i>Carex comosa</i>	Bristly sedge	CNPS
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant	CNPS
<i>Centromadia parryi</i> ssp. <i>parryi</i>	Pappose tarplant	CNPS
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes bird's-beak	CNPS
<i>Chorizanthe cuspidate</i> var. <i>cuspidata</i>	San Francisco Bay spineflower	CNPS
<i>Chorizanthe robusta</i> var. <i>robusta</i>	Robust spineflower	FE, CNPS
<i>Cirsium andrewsii</i>	Franciscan thistle	CNPS
<i>Cirsium fontinale</i> var. <i>fontinale</i>	fountain thistle	FE, SE, CNPS
<i>Cirsium occidentale</i> var. <i>compactum</i>	compact cobwebby thistle	CNPS
<i>Cirsium praeteriens</i>	lost thistle	CNPS
<i>Collinsia multicolor</i>	San Francisco collinsia	CNPS
<i>Dirca occidentalis</i>	western leatherwood	CNPS
<i>Eriophyllum latilobum</i>	San Mateo woolly sunflower	FE, SE, CNPS
<i>Eryngium aristulatum</i> var. <i>hooveri</i>	Hoover's button-celery	CNPS

Species Name	Common Name	Status
<b>Plants (cont.)</b>		
<i>Fritillaria biflora</i> var. <i>ineziana</i>	Hillsborough chocolate lily	CNPS
<i>Fritillaria liliacea</i>	fragrant fritillary	CNPS
<i>Gilia capitata</i> ssp. <i>chmissonis</i>	blue coast gilia	CNPS
<i>Grindella hirsutula</i> var. <i>maritima</i>	San Francisco gumplant	CNPS
<i>Helianthella castanea</i>	Diablo helianthella	CNPS
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	white seaside tarplant	CNPS
<i>Hesperervax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	CNPS
<i>Hesperolinon congestum</i>	Marin western flax	FT, ST, CNPS
<i>Horkelia cuneata</i> var. <i>sericea</i>	Kellog's horkelia	CNPS
<i>Horkelia marinensis</i>	Point Reyes horkelia	CNPS
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE, CNPS
<i>Layia camosa</i>	beach layia	FE, SE, CNPS
<i>Leptosiphon croceus</i>	Coast yellow leptosiphon	CNPS
<i>Leptosiphon rosaceus</i>	Rose leptosiphon	CNPS
<i>Lessingia arachnoidea</i>	Crystal Springs lessingia	CNPS
<i>Lessingia germanorum</i>	San Francisco lessingia	FE, SE, CNPS
<i>Malacothamnus aboriginum</i>	Indian Valley bush-mallow	CNPS
<i>Malacothamnus arcuatus</i>	arcuate bush-mallow	CNPS
<i>Malacothamnus davidsonii</i>	Davidson's bush-mallow	CNPS
<i>Malacothamnus hallii</i>	Hall's bush-mallow	CNPS
<i>Monolopia gracilens</i>	woodland woollythreads	CNPS
<i>Pentachaeta bellidiflora</i>	white-rayed pentachaeta	FE, SE, CNPS
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Choris' popcornflower	CNPS
<i>Polemonium cameum</i>	Oregon polemonium	CNPS
<i>Polygonum marinense</i>	Marin knotweed	CNPS
<i>Potentilla hickmanii</i>	Hickman's cinquefoil	FE, SE, CNPS
<i>Sanicula martima</i>	adobe sanicle	SR, CNPS
<i>Silene verecunda</i> ssp. <i>verecunda</i>	San Francisco campion	CNPS
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	Most beautiful jewel-flower	CNPS
<i>Stuckenia filiformis</i>	slender-leaved pondweed	CNPS

Species Name	Common Name	Status
<b>Plants (cont.)</b>		
<i>Suaeda californica</i>	California seablite	FE, CNPS
<i>Trifolium amoenum</i>	showy rancheria clover	FE, CNPS
<i>Trifolium hydrophilum</i>	saline clover	CNPS
<i>Triphysaria floribunda</i>	San Francisco owl's-clover	CNPS
<i>Triquetrella californica</i>	Coastal triquetrella	CNPS
<b>Habitats</b>		
Common Name		Status
Bay checkerspot butterfly ( <i>Euphydryas editha bayensis</i> ) – Critical Habitat		Designated
Northern Coastal Salt Marsh		CNPS
Northern Maritime Chaparral		CNPS
Serpentine Bunchgrass		CNPS
Valley Needlegrass Grassland		CNPS
Valley Oak Woodland		CNPS

CDF\_S = California Division of Forestry Sensitive

CFP = California state fully protected

CNPS = California Native Plant Society listed rare

Designated = Critical Habitat Designation

FE = federally endangered

FSC = federal species of concern

FT = federally threatened

NL = not listed

SCE = California state candidate endangered

SE = California state endangered

SSC = California state species of special concern

ST = California state threatened

SR = California state rare

SWL = state watch list



## Appendix D: List of Acronyms

ARB	Air Resource Board
BEES	Basic Engineering Estimating System
BMP	Best Management Practice
BNHM	Berkeley Natural History Museum
CalEPA	California Environmental Policy Act
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide
CSMP	Construction Site Monitoring Program
dBA	A-weighted decibels Decibels
DSA	Disturbed Soil Area
EA	Environmental Assessment
ESAs	Environmentally Sensitive Areas
FCAA	Federal Clean Air Act
FHWA	Federal Highway Administration
FTA	Federal Transportation Administration
GHG	Green House Gas
GIS	Geographic Information System
ITS	Intelligent Transportation System
LOS	Level of Service
MPO	Metropolitan Planning Organization
MSL	Mean Sea Level
MTC	Metropolitan Transportation Commission
NAAQA	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
OSHA	Occupational Safety & Health Act
PS&E	Plans, Specifications and Estimates
R/W	Right of Way
RCRA	Resource Conservation and Recovery Act of 1976
REAP	Rain Event Action Plan
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SDC	Seismic Design Criteria
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TOAR	Transportation Operations Analysis Report
TSCA	Toxic Substances Control Act
UCMP	UC Paleontology Museum Database
USDOT	United States Department of Transportation
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds

## Appendix E: Avoidance and Minimization Summary

<p><b>Traffic and Transportation:</b> Each construction stage will attempt to maintain the existing lanes of traffic on the SR 92 overcrossing in each direction and on all on- and off-ramps from SR 92 to SR 82. Potential lane closures for this project will be made during non-peak travel periods. It is anticipated that a Transportation Management Plan (TMP) will be completed for the project which may consist of, but is not limited to, public awareness campaigns, portable changeable message signs to detour vehicle, bicycle and pedestrian traffic for potential temporary street closures. The Construction Impacts section of this chapter details the stage construction for the project.</p>	<p><u>Reference</u></p> <p>Page 51</p>	<p><u>Responsible Party</u></p> <p>Caltrans Design, Traffic Operations</p>	<p><u>Timing</u></p> <p>Design</p>
<p><b>Visual/Aesthetics:</b> Environmental, aesthetic and architectural features shall be included in the project design. These will be designed and implemented with concurrence of the District Landscape Architect.</p> <p>The following measures to avoid or minimize visual impacts will be incorporated into the project:</p> <ul style="list-style-type: none"> <li>• Include architectural treatment on new retaining walls, on the exposed faces, so as to improve visual quality of the walls that face toward adjacent residents and other persons in the area immediately adjacent to the highway;</li> <li>• Include architectural treatment on new sound walls, both front and back sides, to exhibit attractive pattern, color, texture, and/or architectural treatment, so as to improve visual quality of the walls that face toward motorists, adjacent residents, and pedestrians within the highway interchange area;</li> </ul>	<p><u>Reference</u></p> <p>Page 57</p>	<p><u>Responsible Party</u></p> <p>Landscape Architect, Design, Contractor</p>	<p><u>Timing</u></p> <p>Design, Construction, Post Construction</p>

<p><b>Visual/Aesthetics:</b></p> <ul style="list-style-type: none"> <li>• Preserve as many existing trees and plants as is possible, within the interchange project limits. In particular, preserve the existing trees and shrubs that line outside ramps-- eastbound on-ramp to SR 92, and northbound off-ramp to SR 82; Provide temporary fencing to protect trees and plants from potential construction impacts--equipment, personnel, and materials;</li> <li>• Replace trees and plants that are removed, to accommodate construction of the project, at a density sufficient to create an equal amount of screening and green cover at maturity. Replacement highway planting, with plant establishment period, should be provided to offset visual impacts and ensure proper establishment and growth of new replacement landscape plants;</li> <li>• Include dark colors and finishes for traffic signal and roadside appurtenances and fencing, etc., so as to minimize glare;</li> <li>• Consider re-routing or covering existing conduits on the undercrossing bridge structure, so as to improve visual quality and offset visual impacts of the project;</li> <li>• Consider installing City of San Mateo approved architectural street light standards, to match existing standards along SR 82 and areas adjacent to project limits;</li> <li>• Consider installing new wall system of ivy-on-cable-grid, along face of bridge structure abutments next to sidewalks.</li> </ul>	<p><u>Reference</u></p> <p>Page 57</p>	<p><u>Responsible Party</u></p> <p>Landscape Architect, Design, Contractor</p>	<p><u>Timing</u></p> <p>Design, Construction, Post Construction</p>
<p><b>Water Quality and Storm Water Runoff:</b> The project would incorporate the use of temporary construction site Best Management Practices (BMPs) and permanent erosion control BMPs, which are summarized in this report, Storm Water</p>	<p><u>Reference</u></p> <p>Page 67</p>	<p><u>Responsible Party</u></p> <p>Caltrans Water Quality, Contractor</p>	<p><u>Timing</u></p> <p>Construction, Post Construction</p>

<p>Pollution Prevention Plan (SWPPP), and contract plans and specifications.</p> <p>Whenever possible, earth-disturbing construction activities would be scheduled outside of an anticipated rain event. DSAs would be protected in accordance with the project's pollution control measures specified in this report and per the contract plans and specifications. The construction site BMP strategy for this project shall consist of: Soil Stabilization, Sediment Control, Tracking Control, Wind Erosion Control, Non-Stormwater Controls and Waste Management and Material Pollution Controls.</p> <p>Clearing and grubbing areas would be necessary due to ramp widening. The areas to be cleared consist mostly of brush and trees. Existing vegetation will be preserved to the maximum extent practicable (MEP). Disturbed soil areas will be re-stabilized with permanent erosion control measures.</p> <p>The following soil stabilization measures are considered for this project and are included as separate bid line items in the Basic Engineering Estimating System (BEES) of this project: Temporary Cover, Temporary Hydraulic Mulch (Bonded Fiber Matrix), and Temporary Fence (Type ESA).</p> <p>There will be cut/fill slopes due to widening or reconstructing of the ramps, however the cut/fill slopes will be minimized and conformed to the existing slopes.</p>			
<p><b>Water Quality/Floodplain and Storm Water Runoff:</b>The temporary cover would be placed over temporary stockpiles of disturbed soil to prevent sediment runoff from wind or water. The temporary hydraulic mulch (bonded fiber matrix) would be placed on any exposed disturbed soils, stockpiles of soils, and/or unprotected slopes that may be susceptible to erosion from either runoff or wind.</p> <p>Disturbed slopes will be planted with comparable vegetation and maintained until vegetation is well established and self-</p>	<p><u>Reference</u></p> <p>Page 67</p>	<p><u>Responsible Party</u></p> <p>Caltrans Water Quality, Contractor</p>	<p><u>Timing</u></p> <p>Construction, Post Construction</p>

<p>sufficient.</p> <p>When possible slopes would be graded at 2:1 (horizontal:vertical or h:v) or flatter; furthermore, proposed cut and fill slopes are designed to tie into existing slopes that are also flat, which would allow for re-vegetation after construction. All projects incorporating new slopes steeper than 4:1 (h:v) must have an erosion control plan developed or approved by the District Landscape Architect. Any slopes steeper than 2:1 (h:v), a Geotechnical Design Report must be prepared by Geotechnical Services with concurrence from Maintenance.</p> <p>Slopes would be protected during construction through the use of temporary construction site BMPs. Permanent erosion control would be achieved by utilizing compost incorporate and applying erosion control (hydroseeding) on disturbed slopes 4:1 (h:v) or flatter (including biofiltration strip areas), as well as placing rolled erosion control product (netting) and erosion control (hydroseeding) on disturbed slopes between 4:1 (h:v) and 2:1 (h:v).</p>			
<p><b>Water Quality/Floodplain and Storm Water Runoff:</b>Permanent fiber rolls would be placed on proposed slopes and on slopes with existing erosion control concerns. The erosion control measures proposed for the project would be shown on Erosion Control Plans.</p> <p>Some drainage systems including inlets will be relocated as a result of the ramp widening and will be shown on Drainage Plans at a later phase.</p> <p>The following sediment control measures are considered for this project and would be included as separate bid line items: Temporary Fiber Rolls, Temporary Silt Fence, and Temporary Drainage Inlet Protection.</p> <p>Temporary fiber rolls would be placed in areas where there is potential for sediment to run on or off the project site; this includes placing temporary fiber rolls at the top of cut and fill slopes.</p>	<p><u>Reference</u></p> <p>Page 67</p>	<p><u>Responsible Party</u></p> <p>Caltrans Water Quality, Contractor</p>	<p><u>Timing</u></p> <p>Construction, Post Construction</p>

<p>Temporary silt fence would be located along the R/W to prevent sediment from running off the project site. Temporary silt fence would also be placed around all temporary stockpiles to prevent sediment runoff. During construction, temporary silt fences would be placed around existing and proposed treatment BMPs to protect them from being impacted by sediment and construction-related activities.</p> <p>Temporary drainage inlet protection would be placed at all existing and proposed inlet locations to protect inlets from sediment or other construction-related pollutant runoff.</p> <p>The project is required to perform storm water sampling at all discharge locations. Exact sampling and discharge locations will be finalized at a later phase.</p>			
<p><b>Water Quality/Floodplain and Storm Water Runoff:</b></p> <p>Risk Level 2 projects are required to prepare an SWPPP developed and certified by a Qualified SWPPP Developer (QSD) prior to the start of construction. The SWPPP will identify BMPs to reduce water quality impacts during construction. The SWPPP should emphasize: 1) standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas; 2) personnel training; 3) scheduling and implementation of BMPs year-round and throughout the various construction phases; 4) identification of BMPs for non-stormwater discharge such as fuel spills; and 5) mitigation and monitoring throughout the construction period.</p> <p>The SWPPP also requires the QSD to develop a Construction Site Monitoring Program (CSMP) prior to the start of construction, which will be revised to meet ongoing construction activities. For Risk Level 2, the CSMP is required to include the procedures and methods related to the visual monitoring and sampling and analysis plans for non-visible pollutants, sediment and turbidity, and pH. Actual in-field work to comply with the requirements of monitoring, sampling and analysis is to</p>	<p><u>Reference</u></p> <p>Page 67</p>	<p><u>Responsible Party</u></p> <p>Caltrans Water Quality, Contractor</p>	<p><u>Timing</u></p> <p>Construction, Post Construction</p>

<p>be done by a QSD or Qualified SWPPP Practitioner (QSP).</p> <p>Risk Level 2 projects are required to prepare a Rain Event Action Plan (REAP). A REAP is required to be prepared 48 hours prior to any likely rain event. The REAP will be prepared at every phase of construction and for both active and inactive construction areas. The REAP will specify the project location, plus identify the storm water manager, erosion control provider and sampling personnel with emergency contact information.</p>			
<p><b>Water Quality/Floodplain and Storm Water Runoff:</b>The REAP will also present the current construction activity and strategy or actions to be taken for the implementation of BMPs on the project site.</p> <p>This project does require stenciling on existing or proposed drain inlets because pedestrian or bicycle traffic is allowed within the project limits.</p>	<p><u>Reference</u></p> <p>Page 67</p>	<p><u>Responsible Party</u></p> <p>Caltrans Water Quality, Contractor</p>	<p><u>Timing</u></p> <p>Construction, Post Construction</p>
<p><b>Geology/Soils/Seismic/Topography:</b> In accordance with standard Caltrans requirements, detailed geotechnical studies shall be conducted during the design phase. BMPs for erosion and sediment control are noted in the Water Quality section.</p>	<p><u>Reference</u></p> <p>Page 72</p>	<p><u>Responsible Party</u></p> <p>Caltrans Geotech</p>	<p><u>Timing</u></p> <p>Design</p>
<p><b>Paleontology:</b></p> <p>The following mitigation measures are recommended and in accordance to Caltrans' Standard Environmental Reference Guidelines (Caltrans, 2007):</p> <p>A Paleontological Evaluation Report (PER) should be prepared prior to construction to define actual locations where monitoring may be necessary based upon the project design. For budgeting, the PER will provide enough information about the level of effort needed.</p> <p>Based upon the findings from the PER, a Paleontological Mitigation Plan (PMP) may be recommended to define the specific mitigation measures and methods that will be implemented.</p>	<p><u>Reference</u></p> <p>Page 73</p>	<p><u>Responsible Party</u></p> <p>Caltrans Geotech/Contractor</p>	<p><u>Timing</u></p> <p>Design/Construction</p>

<p><b>Paleontology:</b> These recommendations may include:</p> <ul style="list-style-type: none"> <li>• A qualified paleontologist could be present to consult with grading and excavation contractors at pre-grading meetings.</li> <li>• The Principal Paleontologist could also have an environmental meeting to train grading and excavation contractors in the identification of fossils.</li> <li>• If fossils are discovered, the paleontologist (or paleontological monitor) will be called to recover them. Construction work in these areas may need to be halted or diverted to allow recovery of fossil remains in a timely manner.</li> <li>• Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, stabilized, sorted, and cataloged.</li> <li>• Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.</li> <li>• A final report may be completed that outlines the results of the mitigation program.</li> </ul>	<p><u>Reference</u></p> <p>Page 73</p>	<p><u>Responsible Party</u></p> <p>Caltrans Geotech/Contractor</p>	<p><u>Timing</u></p> <p>Design/Construction</p>
<p><b>Hazardous Waste:</b> , there is potential aerial lead contamination due to the aerial deposition of lead from motor vehicle exhaust. Testing will be done during the design phase upon request from the Project Engineer. If test results reveal the soils are contaminated, the materials must be handled according to regulatory requirements. The special handling may include implementing a health and safety plan, and reusing the material according to the Department of Toxic Substance Control Lead Contaminated Soils variance dated September 22, 2000, or it may require off-site disposal of the materials.</p>	<p><u>Reference</u></p> <p>Page 76</p>	<p><u>Responsible Party</u></p> <p>Caltrans Hazardous Waste</p>	<p><u>Timing</u></p> <p>Design</p>

<p><b>Noise:</b> The proposed abatement measure for the adverse noise impact to the 26 units at Elkhorn Ct.: A 536 foot long soundwall, SW-1, along the edge of shoulder of the proposed off-ramp is found to be feasible, as it would reduce the future noise levels by more than 5 dBA. A final decision of the construction of the noise abatement will be made upon completion of the project design.</p>	<p><u>Reference</u></p> <p>Page 88</p>	<p><u>Responsible Party</u></p> <p>Caltrans Noise Department, Contractor</p>	<p><u>Timing</u></p> <p>Design/Construction</p>
<p><b>Biological Environment:</b> No sensitive habitat or listed species occur within the Caltrans ROW and no impact to areas other than the existing Caltrans ROW is anticipated, therefore no mitigation will be required. There will be no impacts to sensitive biological resources, no state or federal permits will be required. Adherence to Caltrans BMPs will be sufficient to protect the limited biological resources that occur in the vicinity of the project site. The primary biological resources of concern with the potential to occur in the vicinity of the project site are migratory birds.</p> <p>CDFW Code sections 3503 and 3503.5 mandate protection of birds' nests and the MBTA of 1918 as amended (16 U.S.C. §§ 703–711) protects migratory birds from unlawful activities such as "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any . . .bird, or any part, nest or egg.". Any work within the project limits during the nesting season will require protection for migratory nesting birds.</p> <p>If construction occurs during the anticipated nesting season, i.e., between February 15 and September 1, a qualified Caltrans-supplied biologist(s) will install bird exclusion materials and conduct nesting bird surveys to comply with the CDFW Code and MBTA. The biologist(s) will receive a two-week notice prior to project implementation to schedule nesting bird surveys. The surveys will be conducted within 48 hours before any ground-disturbing activities occur, including vegetation removal, and will be valid for 3 days, after which new surveys will be conducted. This survey schedule will allow the biologist(s) to remove nests that are started between surveys, well prior to the start of egg-laying. Ground-disturbing activities will not begin until the Caltrans biological monitor has given clearance.</p>	<p><u>Reference</u></p> <p>Page 96</p>	<p><u>Responsible Party</u></p> <p>Caltrans Biology Department, Contractor</p>	<p><u>Timing</u></p> <p>Pre Construction/Construction</p>

<p><b>Noise During Construction:</b> In addition to the aforementioned Standard Specifications, construction noise impacts can be minimized by implementing some or all of the following measures:</p> <ul style="list-style-type: none"> <li>• Avoiding construction activities during the nighttime and on weekends.</li> <li>• Constructing noise barriers as the first order of work.</li> <li>• Using stockpiled dirt as earth berms where possible.</li> <li>• Keeping noisy equipment and haul roads away from sensitive receptors.</li> <li>• Keeping the community informed of upcoming especially noisy construction activities and establish a field office to handle noise complaints.</li> </ul>	<p><u>Reference</u></p> <p>Page 97</p>	<p><u>Responsible Party</u></p> <p>Contractor</p>	<p><u>Timing</u></p> <p>Construction</p>



## Appendix F: List of Technical Studies

1. District *Preliminary Geotechnical Report for SR 92/82 Interchange*, December 2012.
2. *Natural Environmental Study for State Routes 92/82 Interchange Improvements*, July 2013.
3. *Paleontological Identification Report for the State Routes 92/82 Interchange Improvement Project*, December 2012.
4. Technical Information for Location Hydraulic Study and Floodplain Evaluation Summary
5. *Traffic Operations Analysis Report for the State Route 92/82 Interchange*, October, 2013.
6. *Visual Impact Assessment for SM-SR-92/82 Interchange*, July 2013.

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